ADPRO®

FastVu™

Digital Video and Audio Transmission System

Installation & User Manual

Vision Systems

Part No. 200709.06

ADPRO FastVu Digital Video and Audio Transmission Systems

The ADPRO FastVu Digital Video and Audio Transmitter/Transceiver is an advanced, high performance digital video and audio transmission system providing outstanding speed and quality for remote security and surveillance applications. Models include a 20 camera Transceiver (switch configurable as a Receiver or as a Transmitter), a 10 camera rack-mountable Transmitter and a 10 camera wall-mount Transmitter.

Typical ADPRO FastVu Transmission Application

Figure A shows a typical application using the ADPRO FastVu system.

In a typical installation the FastVu can support connection to the following equipment:

- 20 cameras (CAM1 through CAM20) - Model 2020 only
  or 10 camera model (CAM1 through CAM10) - Model 2010 or 3010
- Telemetry Stations for PTZ camera control
- Transparent RS-232 link for remotely located 3rd party equipment
- 1 composite monitor (MON1)
- 1 S-Video recording VCR (Model 2020 only)
- 20 (/10) external Alarm input devices (e.g panic button, door switch, PIR detector or glass break switch)
- 3 external output devices (e.g siren, strobe light, outdoor light or door lock mechanism) - or optionally 10 relay outputs for isolated electrical switching
- 10 Microphone inputs (via the VM22A Audio Switch)
- 10 Speakers

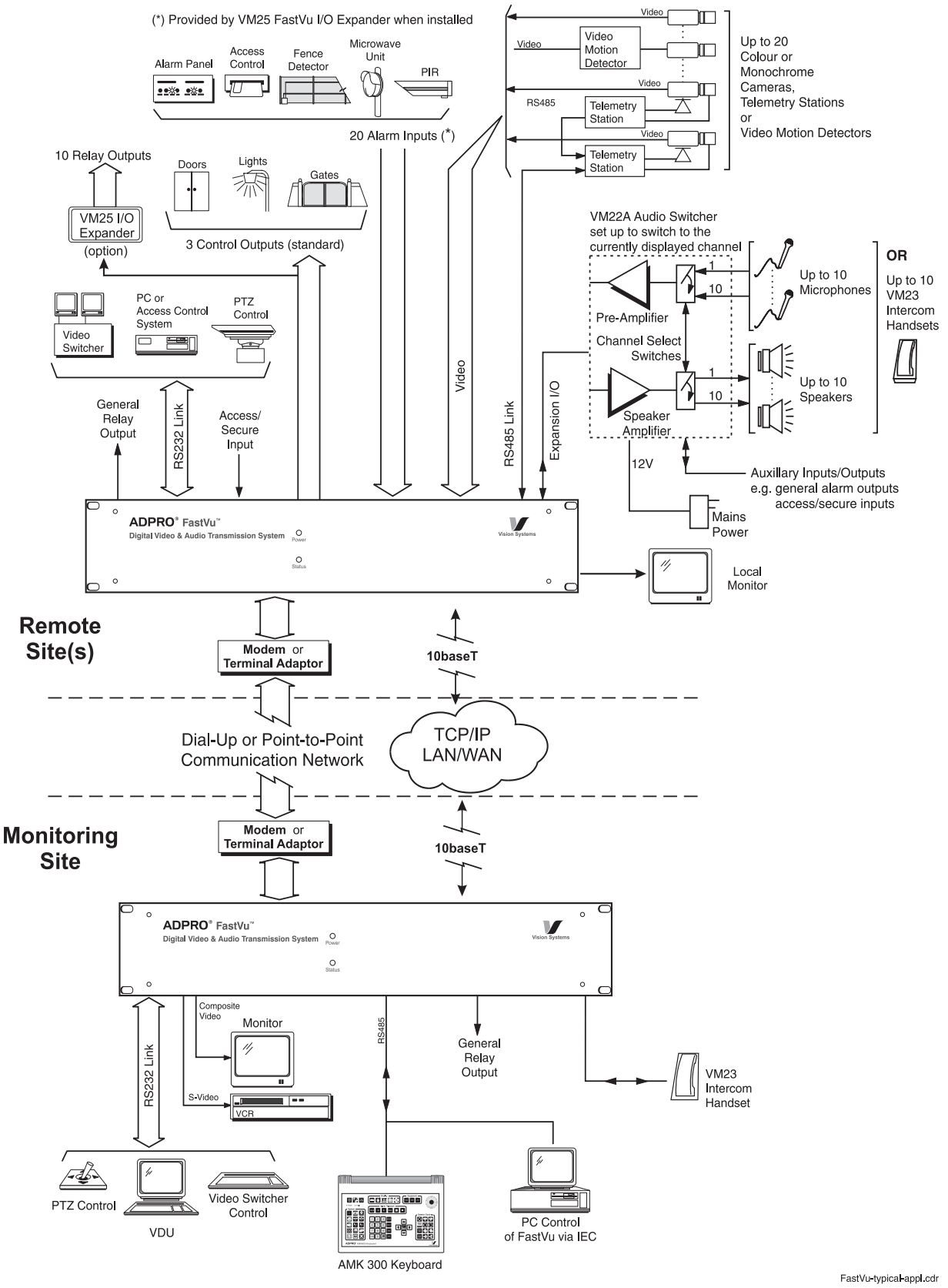


Figure A - Applications (rack mount model only shown)

Key Definitions

The AMK-300 Universal Keyboard is used to control the FastVu system and is normally connected to the Receiver. When multiple FastVu Receivers are required to control a number of remote Transmitters, a single AMK-300 keyboard can be used to control all Receiver units.

The AMK-300 operating keys are divided into a number of areas as shown in Figure B.

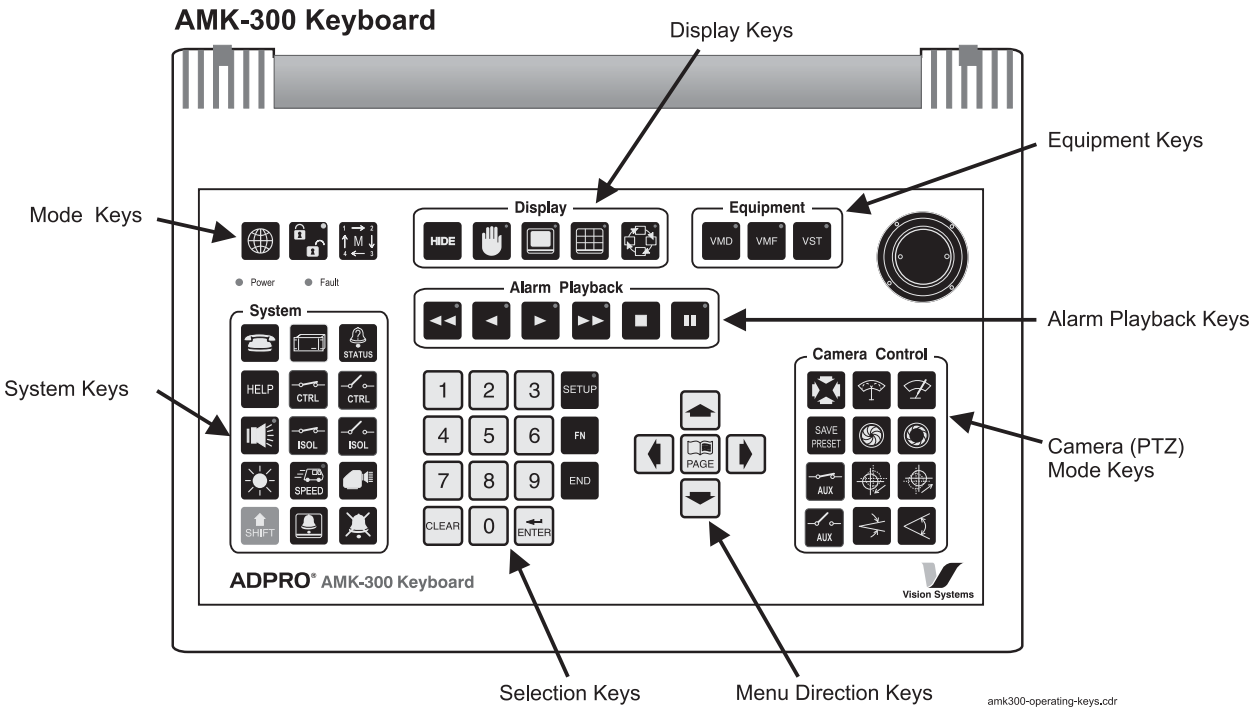


Figure B - AMK-300 Operating keys

Keys and controls of the AMK-300 are divided into several logical groups: These groups are arranged for control of the following feature sets:

- Mode
- Display
- Equipment
- Alarm Playback
- System
- Entry Selection
- Menu Direction and Page
- Camera (PTZ) Control.

The AMK-300 can be used with a number of ADPRO products and some keys may only be applicable to specific types of equipment. The keys shown are those applicable to FastVu.

The following paragraphs describe the action caused by pressing the keys in the specified group. Actions caused by simultaneously pressing both the ***Shift*** key and the specified key are also listed.

Mode Keys

GLOBAL key

The ***Global*** key, is used to control the bi-directional audio feature.

ACCESS/SECURE key

The ***Access/Secure*** key is used to change the status of remote Transmitters. When set to Access the remote site will not report alarm events with the exception of 'No Video Alarms' (if configured to do so). When set to Secure, all alarm events are reported (if they have been configured to do so).

If the remote Transmitter has been set 'locally' to operate in Access (via a hardware input), this key will have no effect. However, when the local hardware is switched back into the Secure state, the key becomes usable again.

Equipment Keys

The key light is illuminated when pressed, providing a visual indication of key selection.

VST key

The ***VST*** (Video Transmission and Storage) key is used when the AMK-300 is connected to a FastVu chassis. If the keyboard does not recognise the connected equipment as a FastVu unit, then an audible error signal will beep.

Display Modes

The monitor can display output from single or multiple cameras and the display keys select differnt modes of operation.

Full Screen Display Key

The ***Full Screen Display*** key is used to display the current camera as a single, full screen.

Multi-Live Key

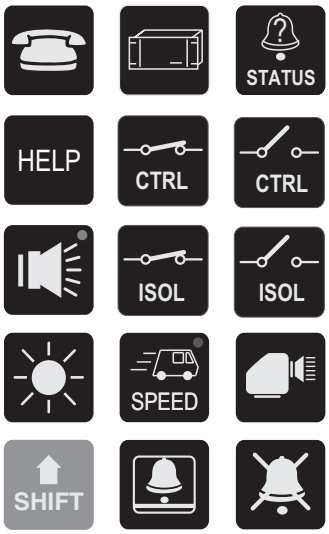
The ***Multi-Live*** key is used to display the video from multiple cameras in a variety of screen split formats. The first press of the key sets the monitor to show a 4-way split with the 'current' camera in screen quadrant #1. Pressing the key again will cycle the monitor display through all available formats. The formats are 4, 7, 10, 13 and 16-way.

Auto Sequence Key

The ***Auto Sequence*** key is used to sequence the (sequence enabled) cameras until stopped by the User.

System Keys

Some of the system keys are specific to the FastVu video transmission system and are detailed below.



CONNECT key

The ***Connect*** key is used to initiate a connection to, or disconnection from a remote site.

When FastVu is 'OFFLINE' and not connected to a remote system, the key will initiate the connection process task. However, if the system is 'on-line' and is using a communications link, pressing the ***Connect*** key will cause the controlling system to start a 'disconnection' task. The connection or disconnection menu dialogue is displayed on the monitor.

CHASSIS key

The ***Chassis*** key is used for the selection of an individual Receiver chassis (unit) for control, when more than one chassis is configured within the system. Once a Receiver chassis number has been set, it will remain active regardless of any other operation, until changed again by the Chassis key.

FastVu systems can daisychain up to fourteen (14) Receivers. Select the required Receiver chassis number <n> then press the ***Chassis*** key.

STATUS key

The ***Status*** key is used to view the system's 'alarm input status' on the monitor.

HELP key

The ***Help*** key is used to display the software version fitted to the unit. When ONLINE, the help message gives both Receiver and Transmitter revision levels.

CONTROL ON key

The ***On*** key is used to initiate the systems's control output dialog screen(s) OR, when used with a number key, turn on one of the system's three standard control outputs. When used in conjunction with an optional ADPRO VM25 I/O Expander module, up to 10 control (relay) outputs may be used. The operational parameters for the control outputs are set via the system setup menu.

The key is used with a **Receiver only**. Press a number key <1-3> followed by ***Ctrl On*** to switch on a control output at the remote Transmitter.

CONTROL OFF key

The ***Off*** key is used to initiate the systems's control output dialog screen(s) OR, when used with a number key, turn off one of the system's three standard control outputs (optional VM25 = 10). The operational parameters for the control outputs are set via the system setup menu.

The key is used with a **Receiver only**. Press a number key <1-3> followed by ***Ctrl Off*** to switch off a control output at the remote Transmitter.

AUDIO key

The ***Audio*** key is used to globally switch the system's audio feature on/off, or to enable/disable audio transmission in a particular direction.

When used alone, the Audio key controls audio transmission from the Transmitter to the Receiver. The reverse direction is controlled by using the ***Shift***

and ***Audio*** keys.

Bi-directional audio is toggled on or off by using the ***Global*** and ***Audio*** keys.

ALARM ISOLATED key

The ***Alarm Isolated*** key is used to temporarily isolate (disable) a particular alarm input while keeping other alarm inputs active. The remote Transmitter must be connected for this key to operate.

ALARM UN-ISOLATED key

The ***Alarm Un-Isolated*** key is used to remove the isolation set on a particular alarm input. The remote Transmitter must be connected for this key to operate.

VIDEO QUALITY key

The ***Video Quality*** key is used toggle the video quality in the current display mode.

- Pressing the key once will toggle between 'Normal Quality' and 'High Quality' settings.
- Pressing a value <1-8> and then the ***Video Quality*** key will select that particular quality level.

VIDEO SPEED key

Not available in current version.

CAMERA key

The ***Camera*** key is used to display a video input from a camera (channel) on the monitor. The Transmitter must be ONLINE. Enter the desired channel number <1-20> followed by the ***Camera*** key. The key may also be used to:

Manually step through all enabled channels in numerical order. The channels may be also displayed in reverse order if the ***Shift***

key held down while pressing the ***Camera*** key.

Manually step through all selected channels in the auto-sequence list for display on the monitor. The ***Camera*** key is pressed without using any preceding channel numbers. The auto-sequence list may be displayed in reverse order if the ***Shift***

key is held down while pressing the ***Camera*** key.

SHIFT key

The ***Shift*** key is used in conjunction with other keys to provide either added functionality to the key, or to provide an additional level of 'security' to an action. 'Security' in this instance is a way of forcing the operator to press two keys simultaneously, thus preventing accidental entry of data by pressing only a single key.

NEXT ALARM key

The ***Next Alarm*** key is used in enter the system's 'alarm event mode' of operation. The oldest alarm is shown first on the monitor if more than one alarm is present.

Use the ***Shift+Next Alarm*** to step and view in reverse order.

ALARM RESET key

The ***Alarm Reset*** key is used to clear the alarm event that is currently displayed on the monitor.

Programming Keys

The ***Programming*** keys consist of four cursor control keys, a move by page key, numeric keys <0> to <9>, the ***Clear***, ***Enter***, ***Function*** and ***End*** keys.

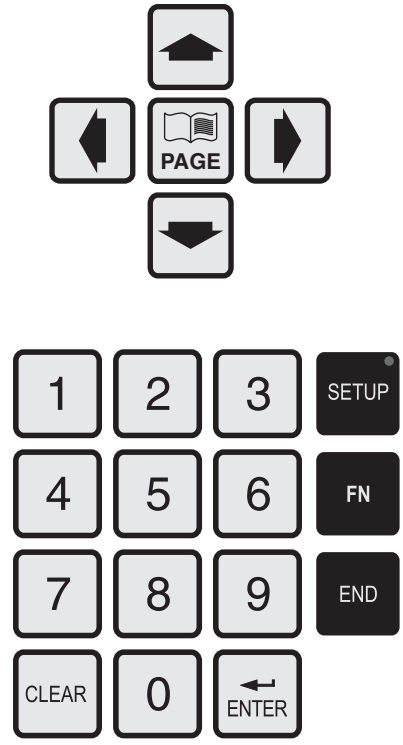


Figure C - Programming keys

SETUP key

Allows entry and exit of Setup Mode.

FN (Function) key

Not available in current version.

END key

While in Setup Mode, the ***End*** key is used to save the current settings and exit to the previous menu.

Camera Control Keys

The in-built 3-axis joystick operates the pan, tilt and zoom (PTZ) functions on the supported telemetry station connected to a selected camera. The ***Camera Control*** keys are used to provide the additional functionality supported by the particular Camera Station. These keys are functional regardless of the currently selected equipment type.

For all keys which require a preceding number, if a mistake is made when entering the number, correction is a matter of ignoring any previous entry and typing a new two digit number ie. '0' '6' ***Delete***.

The number of 'Preset Positions' and 'Auxiliary Outputs' is dependent on the telemetry station type. Refer to the telemetry station manual for details.

Figure D - Camera (PTZ) keys

PRESET / SAVE key

The ***Preset*** key is used to move a PTZ camera to a preset position that has previously been saved using the ***Save*** procedure (see below). It requires the operator to enter the desired preset number followed by the ***Preset*** key.

Pressing the ***Shift***

and ***Preset*** key saves the current settings in the telemetry station memory for the currently selected camera. These preset positions can then be recalled.

To save a PTZ preset, move the camera to the required position then enter the desired preset number followed by the simultaneous pressing of the ***Shift*** and ***Preset*** keys.

AUX ON key

The ***Aux On*** key is used to switch on an Auxiliary output of the currently selected telemetry station and requires the operator to enter the desired auxiliary channel number followed by the *Aux On* key.

Example: To switch on Aux Output #4 on Camera #3, press '***3***' followed by the ***Camera*** key to select the camera, then press '***4***' followed by the ***Aux On*** key.

AUX OFF key

The ***Aux Off*** key is used to switch off an Auxiliary output of the currently selected telemetry station and operates identically to the ***Aux On*** key.

WASH key

The ***Wash*** key is used to momentarily operate the telemetry station wash output. The relevant output switches on while the ***Wash*** key is pressed (provided the feature is available on the telemetry station).

WIPE key

The ***Wipe*** key is used to momentarily operate the telemetry station wipe output. The relevant output switches on while the ***Wipe*** key is pressed (provided the feature is available on the telemetry station).

IRIS OPEN/CLOSE key

For the currently selected camera, the ***Iris open*** or ***Iris close*** key opens or closes the len's iris while the key is being pressed (provided the feature is available on the telemetry station).

FOCUS NEAR/FAR key

For the currently selected camera, the ***Focus near*** or ***Focus far*** key adjusts the lens' focus near or far respectively while the key is being pressed (provided the feature is available on the telemetry station).

ZOOM WIDE/NARROW key

For the currently selected camera, the ***Zoom narrow*** or ***Zoom wid*e** key zooms in or out of the camera scene respectively while the key is being pressed (provided the feature is available on the telemetry station).

HOME key

The ***Home*** key is used to move the currently selected PTZ camera to preset position number 1 (provided the feature is available on the telemetry station).

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or
'ADPRO FastVu Digital Video and Audio Transmitter'.

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Vision Fire & Security warrants that the ADPRO® Product will conform to its Specifications and perform its designed function during the Warranty Period.

Vision Fire & Security also warrants that any component part of the ADPRO Product serviced or repaired by its authorised service department will remain in good working order for a period of 24 (twenty-four) months from the date of service. This warranty is only available on component parts of the ADPRO Product while the ADPRO Product is less than 7 (seven) years old commencing on the start of the Warranty Period and only covers those component parts of ADPRO Product serviced, repaired or replaced.

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DECLARATION OF CONFORMITY

Manufacturer's Name:	Vision Fire & Security Pty Ltd.
Manufacturer's Address:	14 Park Way Technology Park Mawson Lakes SA 5095 Australia.

declares, that the product(s):

Product Name:	ADPRO FastVu Digital Video and Audio Transceiver
Model Number:	AFV-2020-TCVR AFV-2010-TX AFV-3010-TX
Product Options:	All

meet the Standards detailed below.

Declaration of Conformity

EMC Emissions	EN55022:1998 (CISPR 22:1997) / AS/NZS 3548:1995 + A1, A2 Class A Conducted and radiated emissions. EN 61000-3-2:1995 Current harmonic emissions. EN 61000-3-3:1995 Voltage fluctuations and flicker. FCC Part 15 Class A Conducted and radiated emissions.
EMC Immunity	EN 50130-4:1995 +A1 Alarm systems immunity. ENV 50204:1996 Immunity to digital radio telephones radiated field.
Safety	IEC 60950:1991 +A1, A2, A3 & A4 EN 60950:1992 +A1, A2, A3, A4 & A11 when used with the supplied AC power adaptor.

Supplementary Information
The products listed comply with the requirements of the Low Voltage Directive 73/23/EEC (where applicable) and the EMC Directive 89/336/EEC and carries the CE marking accordingly. The products were tested in a typical configuration.

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WARNING INFORMATION

Installations in the United States of America and Canada

For systems installed in the United States of America and Canada the following requirement is applicable:

All equipment installations are required to be in accordance with the National Electrical Code (NEC) ANSI/NFPA 70 and the Canadian Electrical Code (CEC) Part 1, CAN/CSA C22.1

Radio Interference

The FastVu complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The FastVu complies with the electromagnetic emission limit requirements of AS/NZS 3548 and EN55022 Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Static Discharge

ADPRO FastVu system components contain electrical parts that are susceptible to damage from static discharge. Static voltages of one (1) to thirty (30) kilovolts are common in unprotected environments.

When installing or servicing ADPRO FastVu equipment, it is advisable to observe the following standard precautions for handling electronic assemblies to reduce the risk of component damage:

- Minimise handling of electronic assemblies and components,
- Transport, temporarily arrange and store electronic components in recognised anti-static containers,
- Discharge any static voltage from your body before handling electronic components or wear a grounded, Safety-Standard Approved, anti-static wrist strap while handling components, and
- Avoid handling electronic components in areas which have a floor or work-surface capable of generating a static charge.

Internal Lithium Battery

WARNINGS

The ADPRO FastVu contains an internal lithium battery
There is danger of explosion if the battery is incorrectly replaced.
The battery can only be replaced by the Factory or
their Authorised Service Representative.

WARNINGS
Connection to Other Equipment

All interface ports on the FastVu must be only connected to other equipment or systems that are Safety Extra Low Voltage (SELV) rated. Failure to do so will invalidate the electrical safety approval and may cause injury or loss of life.

External Power Supply for ADPRO AMK-300 Keyboard

If using an external power supply with the ADPRO AMK-300 keyboard, the supply used must be a Safety Extra Low Voltage (SELV) rated supply providing a limited power source which meets the requirements of IEC60950 or equivalent.

1.0 Installation

1.1 Minimum System Requirements

A minimum ADPRO FastVu system is shown in Figure 1-1 and consists of:

- two (2) FastVu units, one configured as a Transmitter (all models) and the other as a Receiver (FastVu 2020 only).
- one (1) AMK-300 keyboard connected to the Receiver.
- two (2) 10BaseT drop cables for use on a suitable Ethernet TCP/IP network OR, two (2) modems or ISDN terminal adaptors (plus cables) suitable for use with dial-up or point-to-point telephone lines.
- a monitor connected to the Receiver (either composite video or S-Video compatible).
- one or more cameras, connected to the Transmitter.

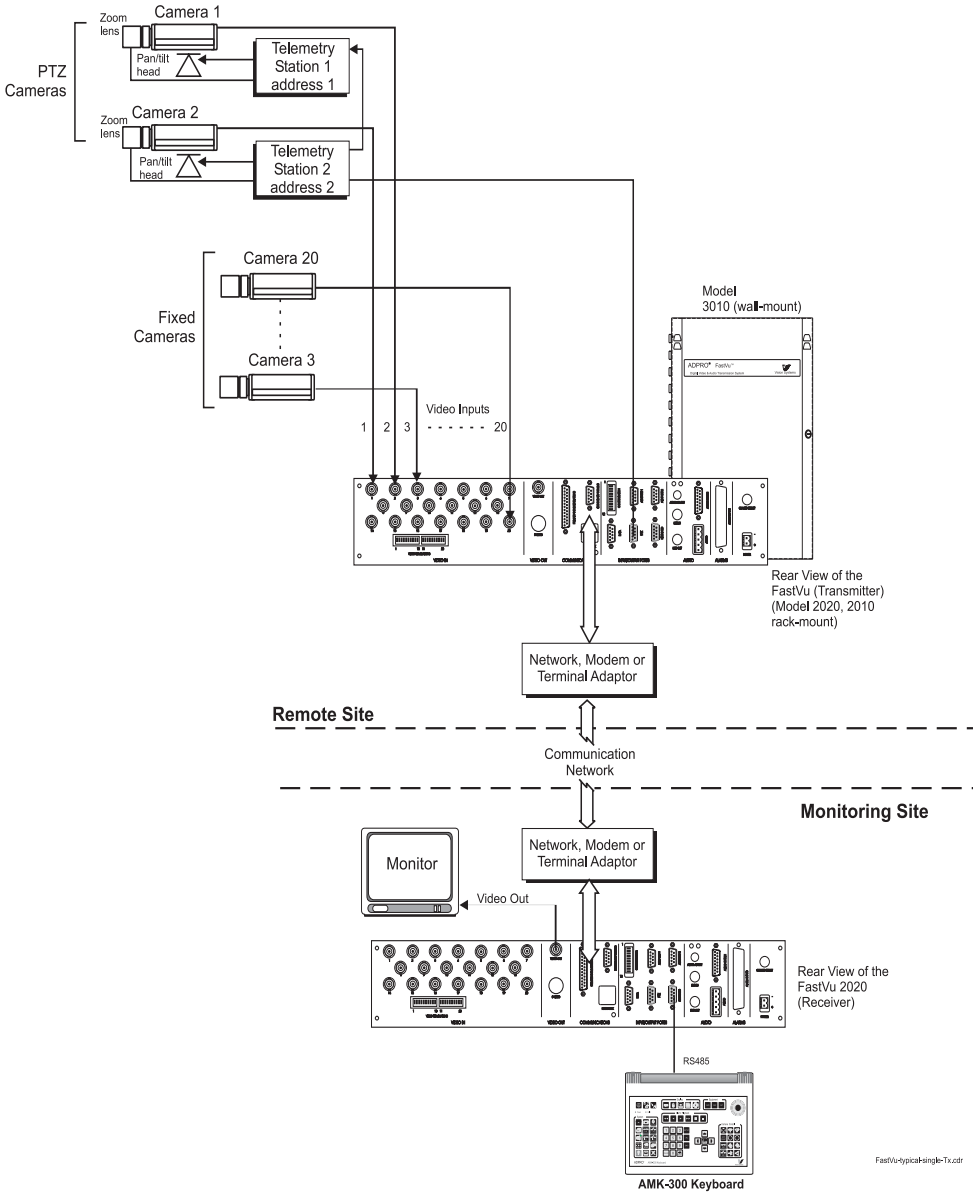


Figure 1-1 - Minimum System Configuration

1.2 Unpacking the ADPRO FastVu

After unpacking the ADPRO FastVu, carefully check for any signs of damage. Any damage should be reported before installation, to your supplier or to Vision Systems Limited directly. Check that the ADPRO FastVu packing carton contains the following items:

1 ADPRO FastVu chassis
1 ADPRO FastVu Installation and User Manual
1 Accessory pack including the following parts:
- 1 Female 37-pin D connector and backshell (solder pins)
- 1 Female 15-pin D connector and backshell (solder pins)
- 1 Female 9-pin D connector and backshell (solder pins)
- 1 5-way screw terminal plug
- 1 2-way screw terminal plug (for power)
- 1 12V power supply adaptor and cable

For FastVu 3010, additional items are included:

Velcro strip (adhesive backed)
Velcro loop strip
Self-adhesive mounting blocks
Cable ties
Dome plugs (for cabinet holes)

1.3 Physical Location

The location of the ADPRO FastVu within the protected premises should be considered carefully and the following notes are provided for guidance and to assist the decision process.

- **Physical Security** - The ADPRO FastVu should be located where it will remain secure under all conditions, even when the premises are open or occupied. The safest place would be a room (or cabinet) with a lockable door. It should not be visible from outside the premises and not be accessible to occupant or visitor tampering. Adequate ventilation is required.

WARNINGS

FastVu equipment and power adaptor must be used only in an INDOOR environment.

- **System Wiring** - Ideally this position will be close to the centre of the site wiring. Excessive cable runs will increase the installation cost, cause voltage drops, degrade signals, and offer greater scope for EMI/ RFI (electrical interference) induced faults, tampers, and false alarms. Wiring considerations should include the following:

  - The largest wiring requirement is the coaxial camera cabling and the wiring to the alarm input and output devices.
  - Mains power for the 12V power supply adaptor.
    CAUTION: Ensure that all instructions included with the power supply adaptor are followed.
  - The system requires at least one video monitor for surveillance and system setup. Here, a further cable (using RG-59 75-ohm coaxial cable or an S-Video cable) connection will be required.

- **Environment** - Choose an inside location that is cool and dry. Do not mount the FastVu anywhere near machinery that generates heat, toxic fumes and dust. Do not mount the FastVu in close proximity to sources of radio frequency or other electromagnetic radiation. These include radio transmitters (both fixed and portable), electric motors, refrigeration or air conditioning systems and high power or multiphase switching equipment

1.4 General Power Requirements

For Electrical Safety compliance with the standard IEC 60950, FastVu must only be operated from the supplied power supply adaptor. Should this AC power adaptor fail please obtain a replacement unit from Vision Systems or your local ADPRO distributor.

AC Power Adaptor	Output Current Rating at 50oC	Limited Power Source	Allowable Configurations	Maximum Current available from AC Power Adaptor for other devices (see Note 1)
AULT SW132	1.2 A	Yes	FastVu 2020, 2010 or 3010 only.	None
AULT PW160	2.0 A	No	FastVu 2020, 2010 or 3010 only.	0.8 A
AULT PW160	2.0 A	No	Any FastVu unit with AM-DTCT-2 Down the Coax Telemetry board fitted.	0.7 A
AULT PW160	2.0 A	No	Any FastVu unit with AM-DTCT-2 Down the Coax Telemetry board fitted and VM25 I/O Expansion.	0.4 A
AULT PW160	2.0 A	No	Any FastVu unit with VM25 I/O Expansion.	0.5 A

Note 1: Any other devices that are connected to the AC Power Adaptor must be suitable for connection to a Safety Extra Low Voltage (SELV) power supply that is NOT a Limited Power Source (LPS).

WARNINGS

Under no circumstances can the VM22A be operated from either of the AC Power Adaptors supplied with FastVu. Connection of the VM22A to the AC Power Adaptor supplied with FastVu will invalidate the safety approval for both FastVu and VM22A and may represent a safety hazard.

CAUTION

When powering other devices from the FastVu AC Power Adaptor do not exceed the current available rating for other devices for any configuration as specified in the above table. Exceeding this rating will cause the AC Power Adaptor ratings to be exceeded and may cause it to overheat and shutdown.

Any AC supply used on the FastVu power supply adaptor should be:

- Provided from a reliable electric supply company - typically this means that the power is not disconnected (or lost) for any more than eight (8) hours at a time in any thirty six (36) hour period and infrequently in a single year.
- Provided from a supply bus within the protected premises that is not isolated at night (or out of hours) or time switched. The supply should be free from voltage spikes or current surges (connected to high power switching equipment or electric motors).
- Supplied directly to the FastVu via circuits that cannot be switched off, intentionally or accidentally.

Always consider local regulations, standards, and guidelines for mains power connected systems.

1.4.1 Power Conditioners and Surge Arresters

The use of an Uninterruptable Power Supply (UPS) should be considered in situations where the mains power is unreliable. A good UPS has the ability to remove interference, sags, and power surges that can cause false alarms, equipment failure or even terminal damage. UPS's are used effectively on all major computer installations and the microelectronics used in many video and alarm systems (including FastVu) are similar, both in their functionality, and their susceptibility to ‘dirty’ mains power.

Power line conditioners or surge arresters can help prevent mains distortion of voltage, current, and frequency caused by load switching, large electric motors, and lightning. These distortions can cause unreliable operation, false alarms, and equipment failure, damage or even total destruction.

1.4.2 Interference Caused by Ground Loops

In some installations, where cameras or monitors are located at a distance from the FastVu rack, considerable ground loop currents can be generated and may cause interference.

Supplying power to different components of the FastVu system may also cause ground loop currents. For example, cameras, monitors and the FastVu chassis may receive power from different phases of a multi-phase supply. Wherever possible, source power to all components of the system from a common phase of the supply.

Where ground loop currents cause a problem in an FastVu installation, the installer may reduce the effect by installing a video isolation transformer on each video channel affected.

1.5 ADPRO FastVu Rear Panel Connections

All external connections to the ADPRO FastVu chassis are made via the rear panel, refer to Figure 1-2:

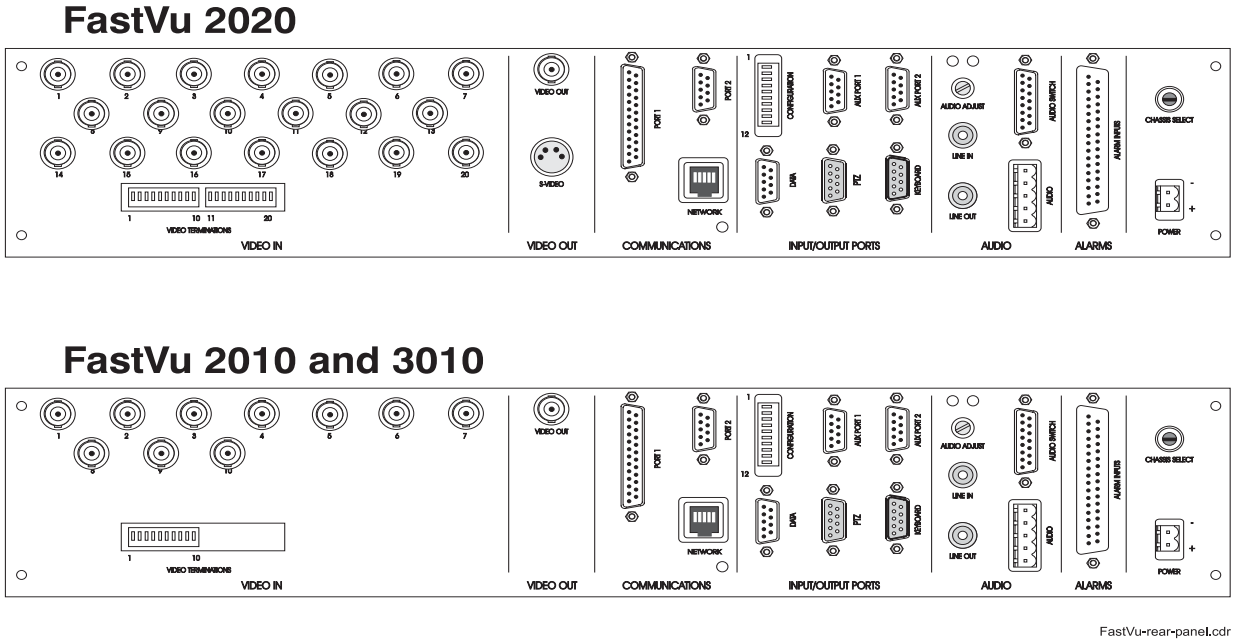


Figure 1-2 - FastVu rear panel connectors (20 channel shown at top and 10 channel below)

The connectors on the rear panel are arranged into a number of groups :

VIDEO IN

- *Video Inputs* - (BNC-Female) - connect colour or black & white cameras or composite video
- *Video Terminations* - (Dipswitch) - terminate the individual channel to either 75Ω (up) or high-impedence for a camera loop-thru connection (down)

VIDEO OUT

- *Video Out* - (BNC - Female) - output for composite video monitor
- *S-video*- (4-pin S-Video - Female) - Model 2020 only. Output for S-Video monitor or S-Video VCR

COMMUNICATIONS

- *Port 1* - (25-pin D - male) - Use for software upgrades
- *Port 2* - (9-pin D - Male) - V.28 output for a maximum 230Kbps data rate
- *Network* - (RJ-45 - Female) - Ethernet 10baseT

INPUT/OUTPUT PORTS

- *Configuration* - (Dipswitch) - configures the various ports and settings (refer to Figure 1-3)
- *Aux Port 1* - (9-pin D - Male) - For future use
- *Aux Port 2* - (9-pin D - Male) - For future use
- *Data* - (9-pin D - Male) - RS232
- *PTZ* - (9-pin D - Female) - RS485, for connection to camera stations. Protocol dependent on type
- *Keyboard* - (9-pin D - Female) - RS485 (or RS232) for connection to AMK-300

AUDIO

Audio Adjust - (Screwdriver slot) - Trimpot for manual adjustment of microphone gain.
Manual Gain LEDs - Red and Green LED for visual indication of microphone gain level.
Audio Switcher - (15-pin D - Male) - supports the following input and output features:

- General Alarm Relay output - N/O and N/C contacts.
- Access/Secure Input to control the operational state of the unit.
- Channel select outputs for remote control of audio multiplexer.
- Press-To-Talk (PTT) input for audio direction control.
- Output to Audio multiplexer.

Line In - (RCA - Female) - line input 6KΩ impedence.
Line Out - (RCA - Female) - output to line 600Ω impedence.
Audio - (5-pin - Male) - Local audio connection for microphone and speaker.

ALARM and CONTROL

The Alarm Inputs connector - (37-pin D - Male) connector supports a number of input and control features:

- Twenty (20) external Alarm Inputs can be connected. (10 only on Model 2010 and Model 3010) Inputs can be programmed (via a setup menu) to trigger an alarm on either open or closed contacts
- Three (3) Control Outputs used with setup for operation as a Transmitter. Low power open drain transistor outputs.

CHASSIS SELECT

Switch used to set the address of the FastVu when used in a multi-chassis configuration.

POWER

Connector for 12V input power from the power supply adaptor.

1.5.1 Configuration Switch Settings

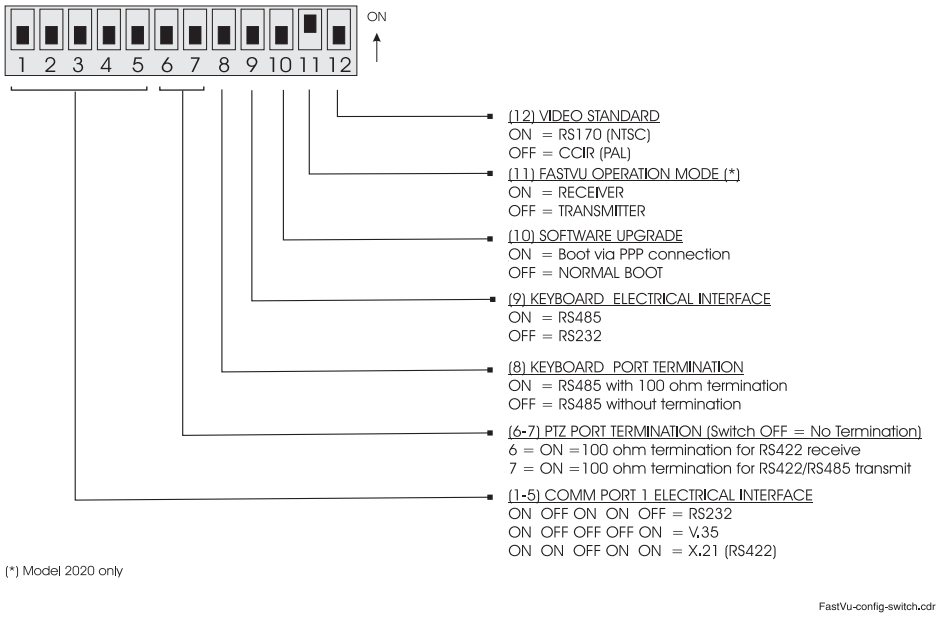

ON
1 2 3 4 5 6 7 8 9 10 11 12
(12) VIDEO STANDARD
ON = RS170 (NTSC)
OFF = CCIR (PAL)
(11) FASTVU OPERATION MODE (*)
ON = RECEIVER
OFF = TRANSMITTER
(10) SOFTWARE UPGRADE
ON = Boot via PPP connection
OFF = NORMAL BOOT
(9) KEYBOARD ELECTRICAL INTERFACE
ON = RS485
OFF = RS232
(8) KEYBOARD PORT TERMINATION
ON = RS485 with 100 ohm termination
OFF = RS485 without termination
(6-7) PTZ PORT TERMINATION (Switch OFF = No Termination)
6 = ON =100 ohm termination for RS422 receive
7 = ON =100 ohm termination for RS422/RS485 transmit
(1-5) COMM PORT 1 ELECTRICAL INTERFACE
ON OFF ON ON OFF = RS232
ON OFF OFF OFF ON = V.35
ON ON OFF ON ON = X.21 (RS422)
(*) Model 2020 only
FastVu-config-switch.cdr

Figure 1-3 - Configuration Switch Settings

1.6 System Wiring Considerations

1.6.1 Electromagnetic Compatibility (EMC) Issues and Instructions

When an ADPRO FastVu system is installed in accordance with the recommendations and procedures in this manual, it will meet the EMC requirements of:

- EN 55022 / AS3548 Class A, and FCC Part 15 Class A digital devices in respect to emissions, and
- EN 50130-4-1 Alarm Systems Immunity.

To ensure EMC compliance for your system installation, make sure of the following:

- CAT-5 Unshielded Twisted Pair (UTP) Data Cable is used for the Network port connection,
- RG-59 coaxial 75ohm Video cable is used for all composite video connections and the cables are terminated with 75 ohm BNC connectors,
- 4-pin mini-DIN S-Video compliant cables are used to connect to S-Video monitors and
- Except for the Alarm Inputs, all other cabling is carried out with shielded (single or dual) twisted pair and the shield itself, along with the associated drain wire, is terminated at the ADPRO FastVu with a connection to the chassis. Also ensure that shields are not terminated (that is they must be trimmed and left 'floating') at the 'device end' (opposite end to the FastVu) of the cable run.

Note that the foil used in some shielded cable is only insulated on one side. Always check the foil shield with an ohm-meter and make sure that the conductive side is in contact with shield termination recommendations in this manual.

1.6.1.1 FCC Advice for Installers and Users in the United States

ADPRO FastVu equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer (or installer) or an experienced radio/TV technician for help.

WARNINGS

Changes or modifications not expressly approved by Vision Systems could void the user's authority to operate this equipment.

1.7 Mounting the ADPRO FastVu

1.7.1 Rack Mounting

The FastVu 2020 and 2010 models are housed in a 2 U high chassis for mounting in a 19" rack as shown in Figure 1-4. To ensure long term electronic equipment reliability, it is advisable to:

- mount the unit clear of other equipment which can dissipate large amounts of heat,
- ensure adequate air flow (either convective or forced) between the unit and its surroundings,
- mount the AC power supply adaptor in an area with adequate ventilation away from other heat sources.

Due to the internal dissipation in the FastVu, do not mount the AC power adaptor on top of the FastVu chassis. Ensure that all the installation instructions provided with the AC power adaptor are followed (refer to Section 1.8).

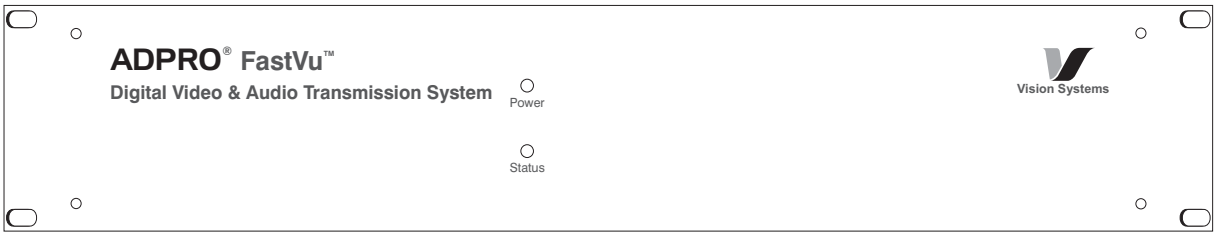


Figure 1-4 - FastVu front panel for 19 inch rack mount models

1.7.2 Wall Mounting

The FastVu 3010 Transmitter chassis is housed inside a wall-mountable cabinet as shown in Figure 1-5. The cabinet is NOT weatherproof and is suitable only for internal building locations such as an interior wall.

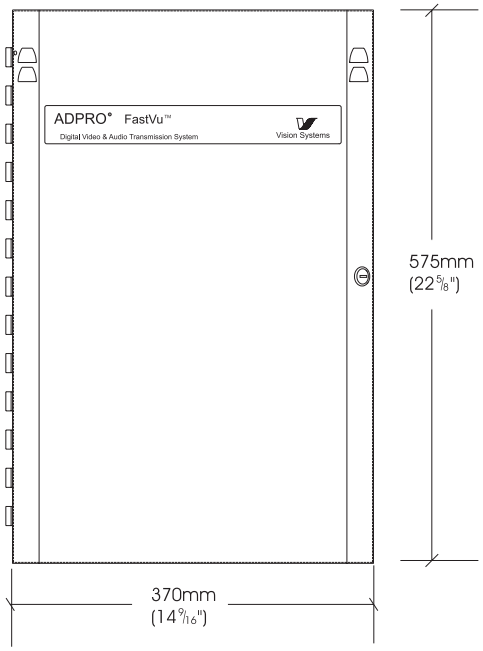


Figure 1-5 - FastVu wall-mount cabinet showing overall dimensions

Figure 1-6 shows the dimensional detail for the mounting holes for the FastVu 3010 cabinet.

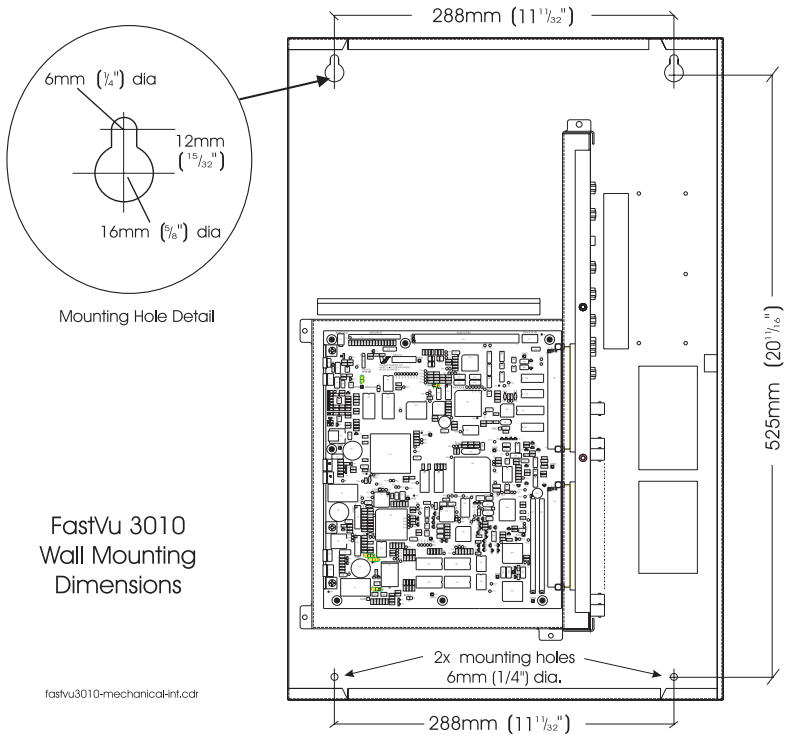


Figure 1-6 - Wall mount cabinet mounting dimensions

1.8 AULT SW132/PW160 Power Supply Installation Instructions

- No user serviceable parts are inside. Locate the power supply near an area accessible to a properly grounded outlet receptacle. The input power plug is the disconnect device to remove power. This product is intended for indoor use only. This product is intended for continuous operation.
- For North American power connection, select a power supply cord that is UL listed and CSA Certified 3 - conductor, 18 AWG, terminated in a moulded on plug cap rated 125 V, 15 A, with a minimum length of six feet.
- For European connection, select a power supply cord that is internationally harmonized and marked '<HAR>', 3 - conductor , 0.75 mm2 minimum cross sectional area, rated 300 V, with a PVC insulated jacket. The cord must have a moulded on plug cap rated 250 V, 10 A.

NOTE

When used in conjunction with the optional ADPRO VM25 FastVu I/O Expander module, the AULT SW132 Power supply must be upgraded to a AULT PW160 model (ADPRO P/N 200886) to support the additional load and ensure continuing compliance with safety requirements.

1.9 Configuring FastVu 2020 as a Receiver or a Transmitter

FastVu 2020 units can be set to operate as either a Receiver or as a Transmitter. FastVu 2010 and 3010 units are dedicated Transmitters and cannot be changed.

The Configuration DIPswitch on each FastVu 2020 unit is set to define its operation as either a Receiver or a Transmitter. Receivers are located at a central site and use the communications network (or link) to connect to remotely located Transmitters.

- FastVu 2020 - Switch #11 = ON for Receiver operation or Switch #11 = OFF for Transmitter operation.

When using FastVu 2010 and 3010, switch #11 has no function.

> **NOTE**
>
> To be configured correctly, this switch must be set BEFORE the unit is powered on.

1.10 Setting the Video Standard

FastVu can be set to operate using either CCIR (PAL) or RS170 (NTSC) video standards. Once a standard has been selected, all video inputs, the Monitor output (Composite video) and the S-Video monitor output (on FastVu 2020 only) will be configured to use the same standard.

To set the required video standard, use the Configuration DIPswitch on the rear panel.

Configuration Switch # 12 ON = RS170/NTSC,
OFF = CCIR/PAL

> **NOTE**
>
> To be configured correctly, this switch must be set **before** power on.

1.11 Keyboard Connection and Configuration

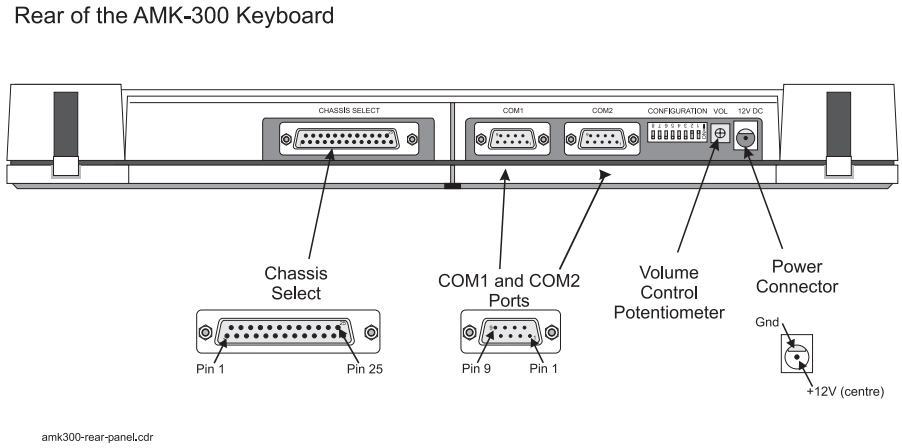


Figure 1-7 - AMK-300 Keyboard Rear View

1.11.1 AMK-300 Configuration Switch

In the normal operating mode of the AMK-300, the Configuration switch settings must be set to control either a Receiver or a Transmitter. Figure 1-8 shows the required switch settings for these modes. Note that new switch positions are only recognised at power on.

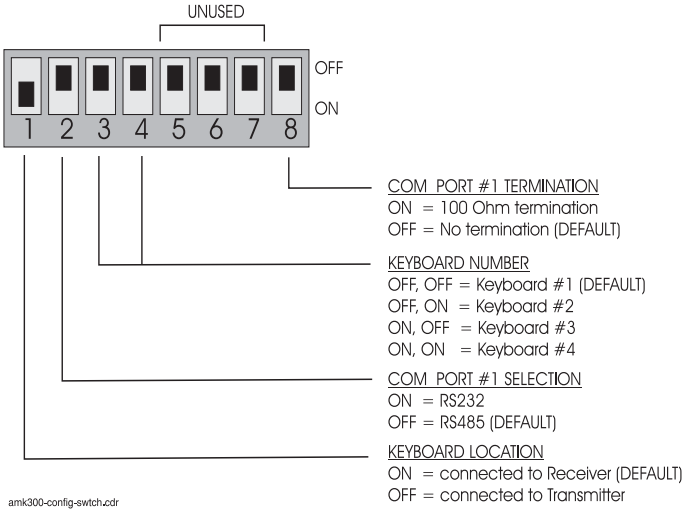


Figure 1-8 - AMK-300 Configuration Switch settings

Default settings for the AMK-300 is for Switch#1 = ON, all other switches are OFF.

1.11.2 Keyboard Cables

The following cables are used to connect an AMK-300 keyboard to a FastVu chassis.

1.11.2.1 RS485 Operation, Maximum 1000m (3300ft)

The RS485 cable connection can be used when long distances are required between the keyboard and the FastVu chassis.

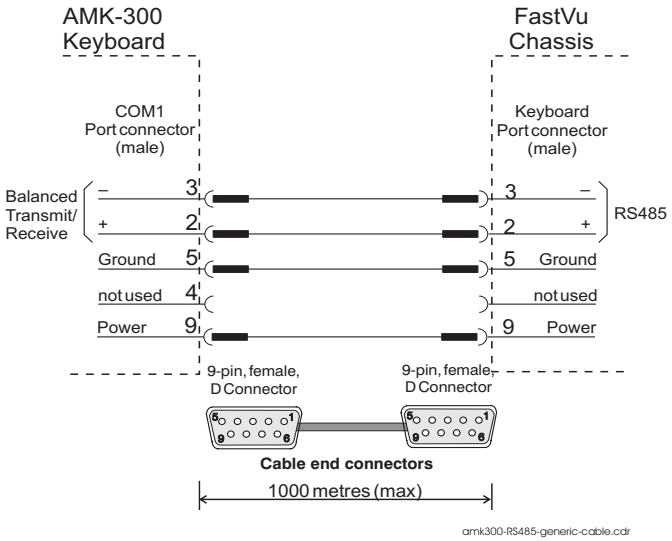


Figure 1-9 - AMK-300 Connecting Cable for RS485

1.11.2.2 RS232 Operation, Maximum 15m (50ft)

The RS232 cable connection can be used when only a short distance (15m, 50ft) is needed between the keyboard and the FastVu chassis.

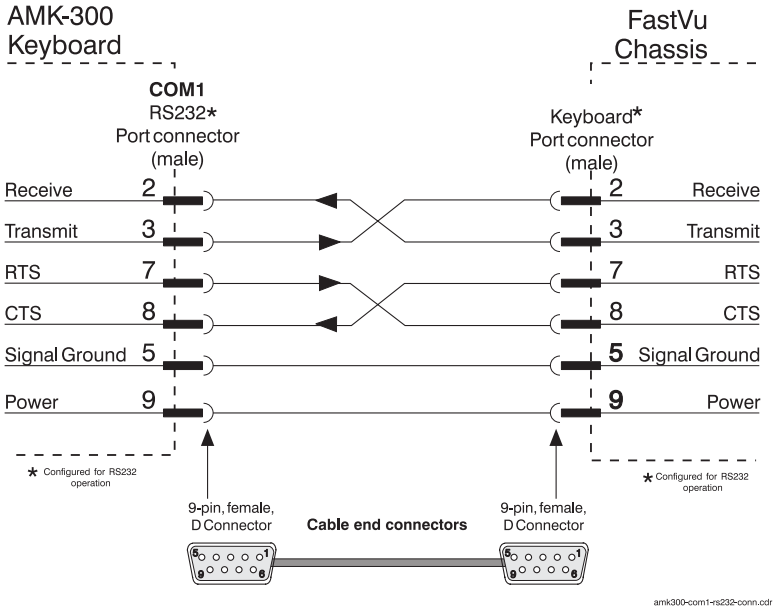


Figure 1-10 - AMK-300 Connecting Cable for RS232

1.12 Using an External Control Device

When it is necessary for the FastVu to be controlled via an external control device, such as a PC or dedicated controller, the Keyboard port can be used to connect this device. Control commands for the FastVu are issued by the external control device using the ADPRO IEC (Inter Equipment Communication) instruction set.

The use and data structure of the IEC instruction set is detailed in the IEC Installation and User Guide (ADPRO Part Number 300081).

Cable connection to the external control device is identical to that of the AMK-300 keyboard, as detailed previously in Section 1.11.

1.13 Video Input Connections

Depending on the model, up to 20 video sources can be connected via the female BNC sockets and should generate a 1.0-volt peak to peak composite colour or black & white video signal when terminated with a 75-ohm load. A combination of colour and black & white cameras can be used. No external camera or system synchronisation is required.

To ensure high picture quality, each video input must be terminated either at the chassis itself or by other external equipment. The Video Terminations Dipswitch on the rear panel allows individual channels to be terminated with 75-ohm or left un-terminated, for example, when the video signal is looped out to other equipment such as a video monitor or video multiplexer. The external equipment must provide the channel termination.
The default Dipswitch setting is Terminated.

WARNINGS

Installations in Lightning Prone Areas

In lightning prone areas, in-line coaxial lightning arresters should be used on the video cables. The arresters should be installed at the cable entry of the building that houses the FastVu. Cameras should also have suitable lightning protection rods installed as close to them as possible. The use of fibre optics to provide electrical isolation on the video signals is strongly recommended in high-risk areas.

1.13.1 Video Input Requirements

To ensure high quality images, the Transmitter must synchronise correctly to the incoming video signal for the selected video standard. For synchronisation to occur the following conditions must be met:

- the synchronisation pulse amplitude at each video input must be within the range of 0.2 to 0.4 volts,
- the peak video amplitude with reference to the black level (ie. not including the synchronisation pulses) at each Video Input must be within the range of 0.5 volt to 1.0 volt, and
- for colour cameras, the minimum colour burst level at each video input must be at least 100 mV.

If the video level is low, cable compensators or video line drivers should be installed at the video source. They should be adjusted to boost the video signal to within the voltage limits given above.

1.13.1.1 Maximum Camera Input Cable Length

The maximum cable length that can be used from a camera before cable compensators are required is dictated by the desired quality of the video picture. *Generally, the shorter the cable between the camera and the FastVu the better the video picture quality.*

Use the following information as a guide for RG59 type coaxial cable (75 ohm nominal impedence):

- In a monochrome system, depending on the resolution required, the cable length should be restricted to 500 metres (1600 feet) before cable compensators are installed.
- Signal degradation due to the coaxial cables characteristics has a far greater effect on colour video. In a colour system, the coaxial cable length should be limited to 250 metres (800 feet) before cable compensators are installed. Again the length is dependent on the required picture quality.

1.14 Video Output (Monitor Output)

Monitors can be colour or black and white, capable of receiving composite video signals via a 75 ohm BNC connector on the rear panel. Monitors must match the desired TV standard set for the chassis, either PAL/CCIR or NTSC/RS170.

Also available on the FastVu 2020, is a S-Video output for connection to a suitable monitor or video recorder.

As well as Camera video and alarm information, the monitor is used to display Setup menus when programming the system. The recommended screen size is a function of the distance from the operator to the screen, but typical installations would use 14-21 inch monitors.

1.15 Connecting Communications Devices

FastVu provides a number of interfaces for connecting communications devices. These interfaces are available via the *Port 2* and *Network* connectors on the rear panel.

In general, there are three primary types of communication links available; dial-up, dedicated or network. Both dial-up and dedicated can be broken further into either analogue (PSTN) or digital (ISDN), depending of the type of circuit available at the site.

1.15.1 PORT 1

Port 1 can be used to upgrade the software for the FastVu chassis when connected directly to a computer or PC via a null-modem cable link.

The 25-pin D connector pins are wired as shown in the Table 1-1 below:

PIN	SIGNAL	DESCRIPTION	PIN	SIGNAL	DESCRIPTION
1	SGND	Shield	**14**	TXD_B	Transmit Data (+)
2	TXD_A	Transmit Data (-)	**15**	SCT_A	DCE Transmit Clock (-)
3	RXD_A	Receive Data (-)	**16**	RXD_B	Receive Data (-)
4	RTS_A	Request to Send (-)	**17**	RXC_A	DCE Receive Clock (-)
5	CTS_A	Clear to Send (-)	**18**	LL_A	Local Loopback (-)
6	DSR_A	Data Set Ready (-)	**19**	RTS_B	Request to Send (+)
7	GND	Signal Ground	**20**	DTR_A	Data Terminal Ready
8	DCD_A	Carrier Detect (-)	**21**	RL_A	Remote Loopback (-)
9	RXC_B	DCE Receive Clock (+)	**22**	RI/DSR_B	Data Set Ready (+) - Also RI function
10	DCD_B	Carrier Detect (+)	**23**	DTR_B	Data Terminal Ready (+)
11	TXC_B	DTE Transmit Clock (+)	**24**	TXC_A	DTE Transmit Clock (-)
12	SCT_B	DCE Transmit Clock (+)	**25**	DSR_B	Data Set Ready (+)
13	CTS_B	Clear to Send (+)			

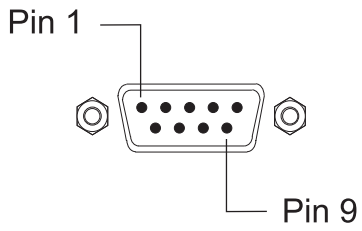
Table 1-1 - 25-pin D connector pins

1.15.2 PORT 2

Port 2 is used to connect to modems and terminal adaptors to support PSTN and ISDN links at data rates up to 230Kbps. The 9-pin D connector pins are shown.

PIN	SIGNAL	DESCRIPTION
1	**DCD**	Carrier Detect
2	**RXD**	Receive Data
3	**TXD**	Transmit Data
4	**DTR**	Data Terminal Ready
5	**GND**	Ground
6	**DSR**	Data Set Ready
7	**RTS**	Request to send
8	**CTS**	Clear to send
9	**RI**	Ring Indicator

Table 1-2 - 9-pin D connector pins



1.15.3 NETWORK Port

Connection to an IEEE802.3 Ethernet Local Area Network is via the NETWORK port. FastVu supports connection to 10baseT wiring systems.

A network address is required for correct operation over a network. Both the Transmitter and the Receiver units must have a unique TCP/IP address (commonly known as the IP address). A number of IP addresses made need to be entered to correctly identify the FastVu and its location on a network.

IP Address
The IP Address is used to identify each piece of equipment connected to the network. Each FastVu requires a unique IP address. The assigned IP Address is defined in 4 fields, for example: 123.07.321.72 Each field may contain an address element up to the value of 255.

Subnet Mask
Network devices communicate by using the subnet mask to determine whether the destination device is located on a local or a remote network. The assigned Subnet Mask is defined in 4 fields, for example: 123.07.255.255 Each field may contain an address element up to the value of 255.

Default Gateway
For communication with an FastVu located on another network, the local FastVu must be given the address of the route to the other network. The default gateway is the address to which the local FastVu sends packets that are destined for the other network.

NOTE

Before configuring FastVu for operation it is important that the IT or Network Manager assigns an IP Address for use by the device. This address is required for correct network operation. Addesses for the ‘subnet mask’ and the ‘gateway’ may also be required prior to commencement of the installation procedure.

1.15.4 Network Port Pinout

The 8-pin RJ-45 Network port connector pinouts are shown below. Use Category 3, 4 or 5 cable when connecting to a 10baseT wiring system or network hub, however Cat 5 cable is recommended for reliable and expandable data transmission.

RJ-45 PIN	SIGNAL
1	Tx+
2	Tx-
3	Rx+
4	n/c
5	n/c
6	Rx-
7	n/c
8	n/c

Table 1-3 - Network Port pin outs

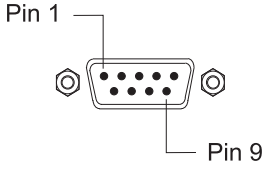
1.16 Transparent Data Port

FastVu allows the (transparent) operation of 3rd-party, RS232 based equipment via the Transparent Data Port D-type connectors on the Receiver and the remote Transmitter at rates up to 57k2 bps.

The Transparent Data Port setup menus (under the General menu) in the Receiver and the Transmitter are used to define the communication parameters required for this RS-232 link. The pinouts for the 9-pin male Transparent Data Port are shown.

PIN	SIGNAL	DESCRIPTION
1	**DCD**	Carrier Detect
2	**RXD**	Receive Data
3	**TXD**	Transmit Data
4	**DTR**	Data Terminal Ready
5	**GND**	Ground
6	**DSR**	Data Set Ready
7	**RTS**	Request to send
8	**CTS**	Clear to send
9	**RI**	Ring Indicator

Table 1-4 - Transparent Data Port pin outs



1.17 Connecting PTZ Telemetry Stations

Telemetry stations used for the control of cameras with Pan/Tilt/Zoom (PTZ) hardware. They are connected to the Transmitter and can be controlled by the joystick on the AMK-300 keyboard at the Receiver. Camera Stations can also be controlled locally from a keyboard connected to the Transmitter.

FastVu supports up to twenty PTZ telemetry stations per chassis *provided* all of the stations operate with the same communication protocol. Communication with the telemetry stations utilise RS485 ‘multi-drop’ signalling via the ‘PTZ’ port on the rear of the FastVu chassis.

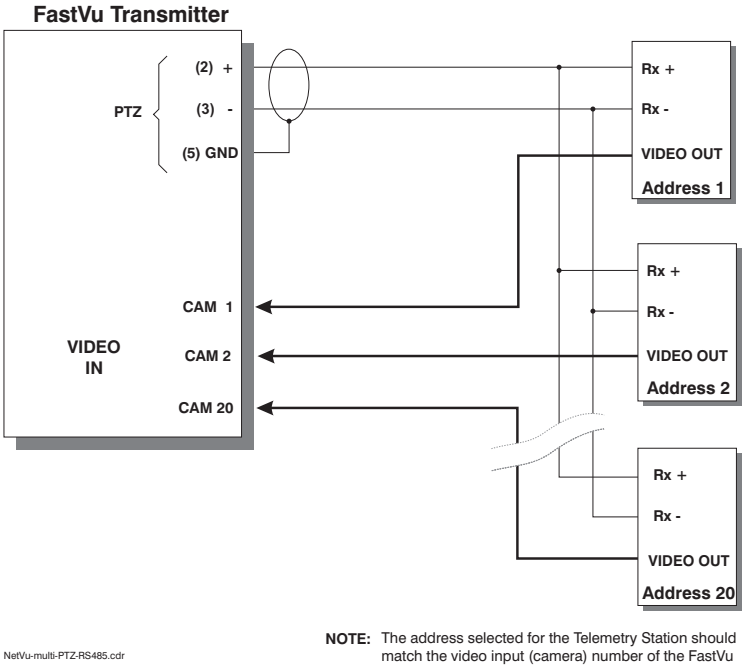


Figure 1-11 - Typical RS485 connection to multiple telemetry stations.

1.17.1 PTZ Port Setup

The following points are applicable to the PTZ port.

- Telemetry stations are connected via a 9-pin D connector, marked ‘PTZ’.
- RS485 control links allow cable lengths of up to 1000 metres.
- Up to 20 (identical) telemetry stations can be connected to one FastVu.

Use the following guidelines when connecting and setting up a telemetry station.

- The same brand and model of telemetry station must be used at a site if multiple units are to be used.
- Set the address of the telemetry station to match the camera input to which the PTZ camera is connected.
- Use shielded twisted pair cable for connection to the telemetry stations.
- Connect the Transmit positive (TXD+ pin#2), Transmit negative (TXD- pin#3) and Ground terminal (pin#5) of the PTZ port of the FastVu to the respective positive, negative and ground terminals of the telemetry station as shown in Figure 1-12.

.

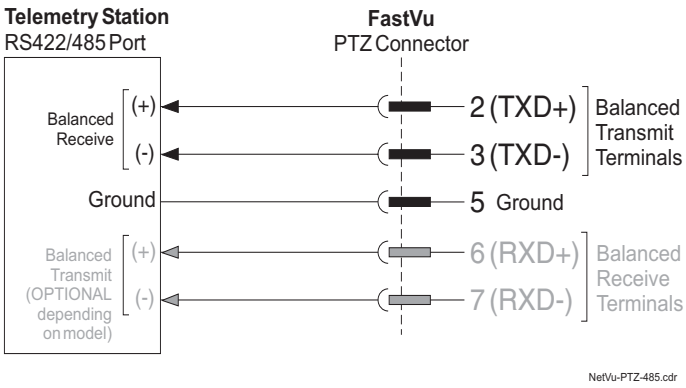


Figure 1-12 - PTZ port connections to the telemetry station

- If applicable, make sure the last telemetry station connected to the link is terminated in 120 ohms.
- With reference to the telemetry station manual;
  - i. connect the pan/tilt head and the zoom lens, focus control and iris control (if applicable)
  - ii. set the lens voltage, high speed PTZ settings, A/D converter for preset systems, homing preset after the last operation plus any other settings in the telemetry station, and
  - iii. make sure the telemetry station data speed is set to the recommended or default baud rate.

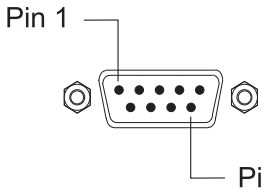


Figure 1-13 - Pin Numbering of the PTZ port

Telemetry station manufacturers provide a variety of models and features. FastVu provides PTZ control ability for a number of popular models and where possible, supports the features provided by the manufacturer. Due to the number of models available on the commercial market, details of connection and use for individual models have been provided on the ADPRO web site.

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ADPRO WEBSITE
For information regarding connection and features of specific telemetry station, see the **Tech-Tips** pages at
http://www.adpro.com.au
or contact yours nearest sales office for a paper copy

1.18 Alarm Inputs

The ADPRO FastVu has twenty external Alarm Inputs (ten for model 2010 and 3010). When a FastVu unit is in the Secure state, the camera setup options can be programmed to trigger an alarm on detection of either a closed contact or an open contact condition of the external Alarm Input. The Alarm Inputs are normally connected to alarm sensors such as door switches, passive infrared detectors, microwave detectors, vibration sensors, electric field detectors etc.

The setup options for Alarm Inputs are described with reference to the 'rest' or non-alarm position of a set of switch contacts:

- ***Normally Open*** - needs a closing contact to activate an alarm
- ***Normally Closed*** - needs an opening contact to activate an alarm

1.18.1 Driving the Alarm Inputs

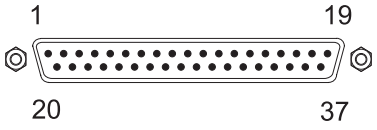
For an alarm input to be recognised, the input device must hold a changed state for a minimum period of 100 milliseconds.

- For a valid closed contact, the total resistance, including wiring resistance, must be below 150 ohms.
- For a open contact to be valid the resistance presented at the Alarm Input must above 2,500 ohms.

The Alarm Inputs are shown in Table 1-5. Note that ground is not isolated from chassis ground.

Pin Function	37-way pin number
Alarm IN - 1 to 19	1 to 19
Alarm IN - 20	37
Control Output #1	20
Control Output #2	24
Control Output #3	28
Clock Sync input	32
Ground (0V)	21, 22, 23, 25, 26, 27, 29, 30, 31, 33, 34, 35, 36.

Table 1-5 - Alarm Input pin numbering on the rear panel



Pinouts 37-way D - Male

Figure 1-14 - Alarm In Connector Pinouts

1.18.2 ADPRO VM25 FastVu I/O Expander (OPTION)

When a FastVu Transmitter is connected to an optional VM25 FastVu I/O Expander, additional protection for the Alarm Inputs is provided via tamper detection circuitry (BS8418 Compliant).

All twenty Alarm Inputs are supported for model 2020 (10 for model 2010 and 3010) and three 15-way screw connectors are supplied to facilitate cable termination on the VM25. Alarm Inputs can be configured using the following termination methods:

1) No End of Line (EOL) Normally Closed (NC),
2) No EOL Normally Open (NO),
3) Single EOL NC,
4) Single EOL NO,
5) Dual EOL NC,
6) Dual EOL NO.

For operation of the alarm inputs when the FastVu is fitted with an VM25 I/O Expander, refer to the ADPRO VM25 FastVu I/O Expander Installation Guide (ADPRO P/n 201279).

1.19 Control Outputs

Control Outputs are used to control external (third-party) equipment connected to the Transmitter at a remote site. They provide the equivalent of a 'switch' that can be controlled from the Receiver's keyboard at the central site. At the Receiver, by selecting one of three Control Output numbers and pressing the ***Ctrl On*** or ***Ctrl Off*** keys, the Control Outputs at the Transmitter will respond accordingly.

As standard, the ADPRO FastVu has three Control Outputs in the form of open-drain transistors. Table 1-6 shows the logical relationship between the ***Ctrl On*** and ***Ctrl Off*** keys at the Receiver and the control outputs.

Key Pressed	Control Output
Ctrl On	Low Impedance to ground (<0.5ohms)
Ctrl Off	High Impedance to ground (>1 Mohm)

Table 1-6 - Relationship of Control Keys at Receiver to Control Outputs at Transmitter

The Control Outputs can be used to initiate control of equipment such as lights, sirens, gates and control equipment.

1.19.1 Connecting to the Control Outputs

The three Control Outputs are available via the 37-pin male D 'Alarm In' connection on the rear panel. Refer to Table 1-5 for pin connections and signal specifications.

WARNING

For high power/voltage equipment, suitable interface circuitry must be used between the Control Outputs and the equipment. The ADPRO VM25 FastVu I/O Expander is suitable for this purpose.

1.19.2 ADPRO VM25 FastVu I/O Expander (OPTION)

When a FastVu Transmitter is connected to an optional VM25 FastVu I/O Expander, ten (10) relay based control outputs are provided. Refer to the ADPRO VM25 FastVu I/O Expander Installation Guide (ADPRO P/N 201279).

> **NOTE**
>
> If power for the VM25 FastVu I/O Expander is required to be sourced from the same supply as that of the FastVu (Transceiver or Transmitter) the power supply must be upgraded to an AULT PW160 (ADPRO P/N 200886).

1.20 Access/Secure Input

By default, FastVu operation is in the **Secure** state and will respond to an Alarm Input trigger by raising an Alarm condition. An Access/Secure input is provided to allow the Transmitter to be independently set into the **Access** state of operation. This input is usually connected to an alarm panel or access control system. In the Access state, trigger conditions on an Alarm Input **do not** raise an Alarm condition. For example, during business hours a remote site may be placed into the Access state when it's local security system is deactivated, but will revert to the Secure state after hours.

The Access/Secure input is also used to set/reset any Entry or Exit delays programmed into the system.

When the Access/Secure input pin (located on Audio Switch connector, pin 5) is 'open' (or 'high'), the FastVu operates in the Secure state. Placing a 'closed contact' on the pin (ie shorting to Ground) switches the FastVu system into the Access state.

> **NOTE**
>
> A FastVu Transmitter may also remotely be placed in the ACCESS state by a FastVu Receiver or ADPRO Video Central (PC based Receiver). This action is independant of the condition on Pin 5 (Access/Secure). However, when Pin 5 is switched from the ACCESS state to the SECURE state, the Transmitter software will correctly reflect the Secure state of the Transmitter.

1.21 General Relay Output

A Form C single pole changeover contact set is available on the Audio Switch connector (pins 4,11,12). If configured to do so, the relay activates while the ADPRO FastVu has an alarm active. The contacts will remain in the changeover condition until all alarms are reset. The relay may also be configured to activate whenever the unit is connected via a network or data link to another FastVu unit. This feature may be used (for instance) to notify an alarm system when FastVu activity is taking place.

1.22 Audio Switch Connections

There is a 15-pin 'Audio Switch' connector on the ADPRO FastVu. The functions available are compatible with the and VM22A Audio Switchers.

Pin Function	Signal	Pin	Specifications
Serial output for Channel Number	Serial Clock	14	Open drain output 32V maximum 100mA maximum On impedence <0.5 ohm
	Serial Data	7	
	Serial Strobe	15	
	'Alive'* see note	8	
Audio Signals	Audio Out (+)	1	Output impedence >6K ohm Nominal output level = 315mVrms
	Audio In (+)	2	Input impedence >6K ohm Nominal level = 10mVrms to 400mVrms
	Audio Common	9	Audio Signal common
Press-To-Talk (PTT)	PTT Input	13	
Access/Secure	Acc/Sec Input	5	
Spare	unused	6	
General Alarm Relay	Common	4	Contact Rating 1A at 32V
	N/O	12	
	N/C	11	
Ground	Ground	10	
VCC	Power	3	+5V

Table 1-7 - Audio Switch Functions and Pinouts

(*) Note: The "Alive " output pin reflects the operation of the FastVu's front panel LEDs. The output is a low impedence when the Green LED is ON and a high impedence when the Red LED is ON.

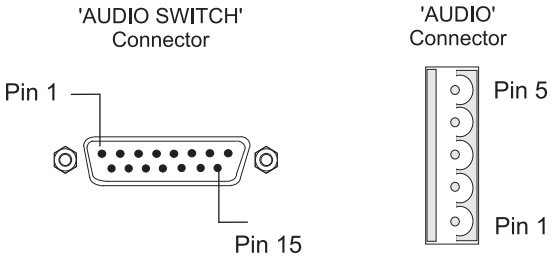


Figure 1-15 - Audio Connector Pinouts

1.22.1 Audio Interface

Audio signals for direct connection to microphone and speaker(s) are connected to the FastVu via the 'Audio' connector (5-pins - refer to Figure 1-14) on the rear panel. Signals on each pin are shown below.

Signal	Pin	Specification
Microphone (+)	4	Differential impedence > 3K ohm Single ended impedence > 6K ohm Nominal signal level is 100uV rms to 10mV rms
Microphone (-)	5	
Shield	3	
Speaker (+)	2	1 watt (max) output into 8 ohm Total harmonic distortion < 5%
Speaker (-)	1	

1.22.2 Audio Line Connection

Audio line level signals are connected to the FastVu via the 'Line In' and 'Line Out' connectors on the rear panel.

Line Signal	Specification
Line IN - RCA connector	Input impedence > 6K ohm Nominal level = 10mV rms to 400mV rms
Line OUT - RCA connector	Output impedence = 600 ohm Nominal level = 315mV rms

1.22.3 Audio Level (Manual Microphone Gain Control)

A trimpot (marked **Audio Level**) is located on the rear panel. It is used in conjunction with the two audio LEDs (located just above the trimpot) to manually set the microphone gain level when the AGC circuit is DISABLED via the Setup menu.

The trimpot is turned **clockwise** to increase the microphone circuit gain. To set the gain level, talk normally into the microphone at a distance of approximately 30cm (1ft) and adjust the trimpot until the RED LED just starts to light. This is the maximum gain position. For optimum operation, back-off the trimpot slightly (anticlockwise) to ensure the RED LED only flickers when **loud** voice levels are used at the microphone.

Note that microphone AGC is usually set to **Disabled** when the **Intercom** mode of operation is used. To optimise audio quality and reduce the detrimental effects of audio feedback (such as whistling), Echo Cancellation and AGC (Automatic Gain Control) cannot be used together. Refer to Section 2.13 for the Transceiver or Section 3.11 for the Transmitter).

1.23 Connection to the ADPRO Amux 20CDK

The ADPRO Amux 20CDK is an Integrated Video Management System with an advanced 20-channel multiplexer. FastVu systems can integrate with Amux to allow centralised control and viewing of up to 20 cameras and control of PTZ telemetry stations connected to the Amux system.

Amux features such as 'down-the-coax' PTZ control of camera stations and Activity Detection can be used to provide enhanced system operation for FastVu.

NOTE

1) In the Fast Scan PTZ setup menu, the camera station option must be selected as 'Amux IEC'.

2) Remote setup of the Amux can be achieved by connecting the Amux's Monitor 1 output to either Channel 10 (for 10 camera config) or Channel 20 of the FastVu Transmitter.

The following diagrams show the connections required for 10 channel (FastVu 2010 or 3010) or 20 channel (FastVu 2020) operation.

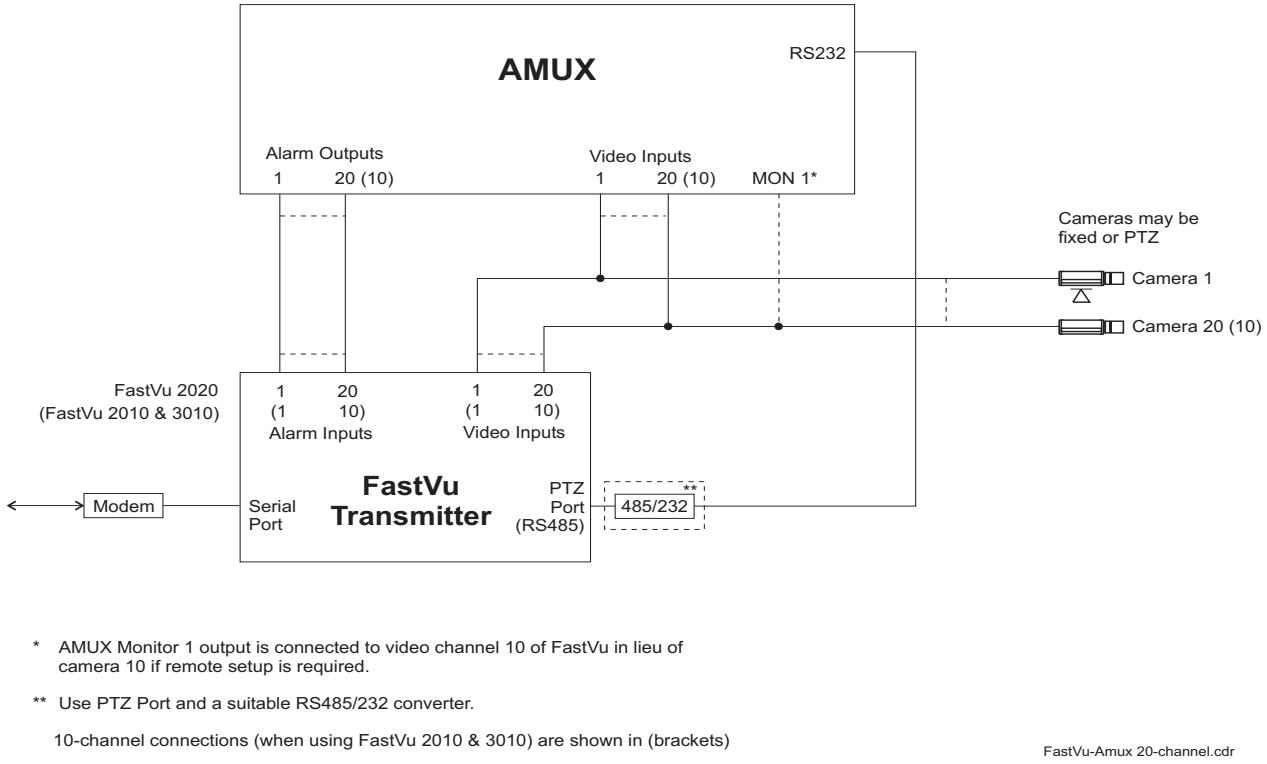


Figure 1-16 - Connection of Amux to a FastVu Transmitter

Special Operational Procedures

When connected to a FastVu, a number of Amux operations need to be handled according to the following procedures:

Passwords

Passwords cannot be sent to the Amux when connected via FastVu and must be disabled in the Amux using local setup from the Amux keyboard. To disable password checking, use the Setup menu to set the General -> Passwords option to ***Disable***. To make the new configuration active, use the ***Exit*** and ***Save*** option from the Setup menu.

Resetting Amux Alarms

To enable clearing of Amux alarms via FastVu, each Amux must have each connected camera's 'Alarm Reset' option set to ***Timed***.

NOTE

The timed automatic reset option does not apply to a Video Loss alarm (described below).

'No Video' Alarms

When an Amux channel suffers a **video loss**, the Amux can (conditionally) generate a **No Video** alarm condition (*Note 1).

To reset a video loss condition when connected via a FastVu:

1) Ensure the cause of the video loss is rectified
2) Enter and then exit Amux Setup mode (this will cause the video loss alarm to be reset).

or, if the cause of the video loss cannot be corrected, then

1) Enter the Amux Setup mode
2) Enter the ***Camera*** menu and select the faulty camera number
3) Set the Connected status to ***NO*** (this will remove the camera from the alarm list)
4) Exit Setup mode.

*Note 1: Within the Amux Setup menu, the unit can be conditionally set to 'Alarm on Loss' or 'No Alarm'. Operational considerations or policies for each site will dictate whether Amux video loss alarms are to be generated.

2.0 Receiver Setup

2.1 Hardware Required to Run Setup

A number of Setup menus are provided to quickly and easily configure the ADPRO FastVu for operation. The menus and any associated stored parameters are held within non-volatile memory.

To view the Setup menu, a monitor connected to Video Out (or S-Video output) is needed. Ensure the monitor is correctly connected, power is available and the unit is switched on.

There are two ways to access the Setup Menus.

- The AMK-300 external keyboard. Plug the keyboard into the Keyboard port on the rear panel.
- The VM87 Hand-Held Programmer. Plug the VM87 into the Keyboard port on the rear panel.

2.2 Power Up

The green **Power** and the red **Status** LEDs on the front panel are lit as soon as power is applied to the unit. The FastVu immediately starts to perform internal tests to ensure both software and hardware integrity.

> **NOTE**
>
> Prior to power up, set the Configuration DIP switch on each FastVu 2020 unit to define its operation as either a Receiver or a Transmitter. Set switch #11 to 'ON' for a Receiver, 'OFF' for a Transmitter.

A successful self-test ensures all diagnostic tests have been passed and to confirm this, the red **Status** LED goes off.

> **NOTE**
>
> The self-test function may take up to 45 seconds to complete. During this period, any display on the monitor screen is not meaningful and should be ignored.

- If the self-test fails, the red **Status** LED remains **On**.
- If the power fails, the green **Power** LED will be **Off**.

If the diagnostic tests fail repeatedly, the user should note any details of the error and contact the ADPRO support service or the local ADPRO supplier.

2.3 Entering Setup Menu

To use the setup menu, first ensure the FastVu unit has successfully completed the power up diagnostic tests.

SETUP Press the ***Setup*** key on the AMK-300 to enter setup mode.

Password checking to the Setup Menu is either:

- **Disabled** when no password protection is required or
- **Enabled** requiring a password to be entered

Password checking is 'Enabled or Disabled' via the menu found in General Setup…/Passwords.

2.4 Password Checking

If password checking has been enabled, use the keyboard to enter the four-digit, numeric only password. The factory default settings are:

Password checking = OFF
Password = **1111**

If password checking has been enabled and an incorrect password is entered, the keyboard will double-beep and an **Invalid Password** dialogue box will be displayed. If a password is lost or forgotten, refer to the Troubleshooting Section of this manual for the correct procedure to override password checking.

- CLEAR to delete the incorrect entry
- re-enter the correct password.

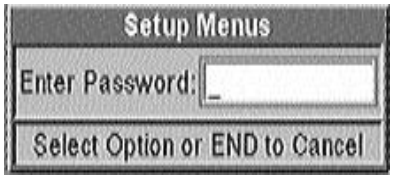


Figure 2-1 - Password Entry Dialogue

2.5 Leaving Setup

When changes to the setup parameters are completed, leaving the Setup menu will prompt the User to save the current settings (including any changes that have been made).

NOTE

Exit from Setup may take up to 8 seconds. During this time the 'FastVu Main Menu' screen will be displayed. Do not power the unit down during this period.

Options available for any changes to Setup is either:

- **Save Local Settings and Exit** — Changes are stored in the FastVu NVRAM permanent memory and are immediately available for use
- **Exit Without Saving Local Settings** — Changes are discarded and 'last stored' setting is used.

2.6 Setup Menus

The setup menus provide access to a number of sub-menus for configuration to suit individual site requirements.

Within each major group, all parameters associated with that group are available for configuration. Any previously entered (or factory default) parameters are shown for review.

Parameters that are capable of being changed are altered by selecting 'from a list' or option, or by directly entering a data value.

Once a parameter is altered, the user can exit from the setup mode and immediately use the new values.

2.7 Using the Menu System

The FastVu menu system is navigated by using the AMK-300 keyboard (or the VM87 Hand-Held Programmer):

To move between menu selections:

use the keys.

To access a menu selection, use the

key.

2.7.1 Fast Buttons

Next to some menu options, a number may be seen. The numbers are used as 'Fast Buttons'. (In the example shown in Figure 2-2, there are seven Fast Buttons.

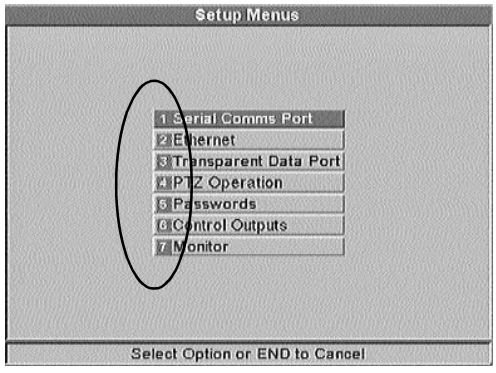
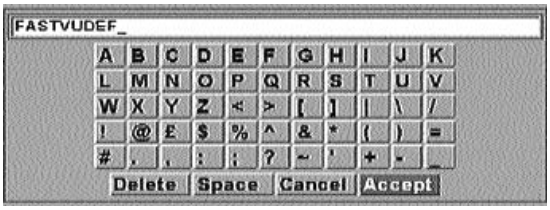


Figure 2-2 - Fast Button Numbers

To 'Fast Button' a menu option, simply press the corresponding number on the keyboard.

2.7.2 Alphanumeric Names

For entry of alphanumeric names, (with both letters and numbers), a special virtual keyboard is used:



Use the following procedure to enter characters from the virtual keyboard.

- Use ↓ ↑ ← → to highlight (blue background) the required letter or symbol.
- Press ENTER to place it on the 'assembly bar'
- To enter a number into the name, simply press the corresponding number key on the keyboard.
- To finish and accept the name on the assembly bar, highlight the ***Accept*** button or press END
- If a mistake is made, either:
  - use the ***Delete*** button to erase the last letter or symbol or
  - use the CLEAR key to erase **All** characters.

2.8 Setup Menu Structure

Programmable parameters are entered or altered via a menu-based system. The menu structure consists of a number of levels and sub-menus. The applicability of some menu or sub-menu options can be affected by the setting(s) of other options. Refer to Figure 2-4 for a diagram of the FastVu menu structure.

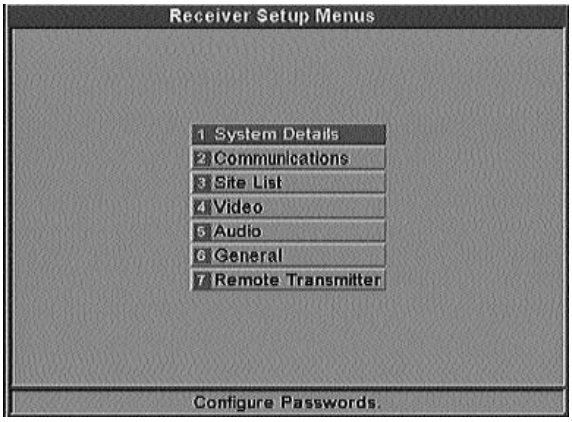


Figure 2-3 - Setup menu structure

Please refer to the **pull-out** Menu flow diagrams for a complete overview of the FastVu menu structure.

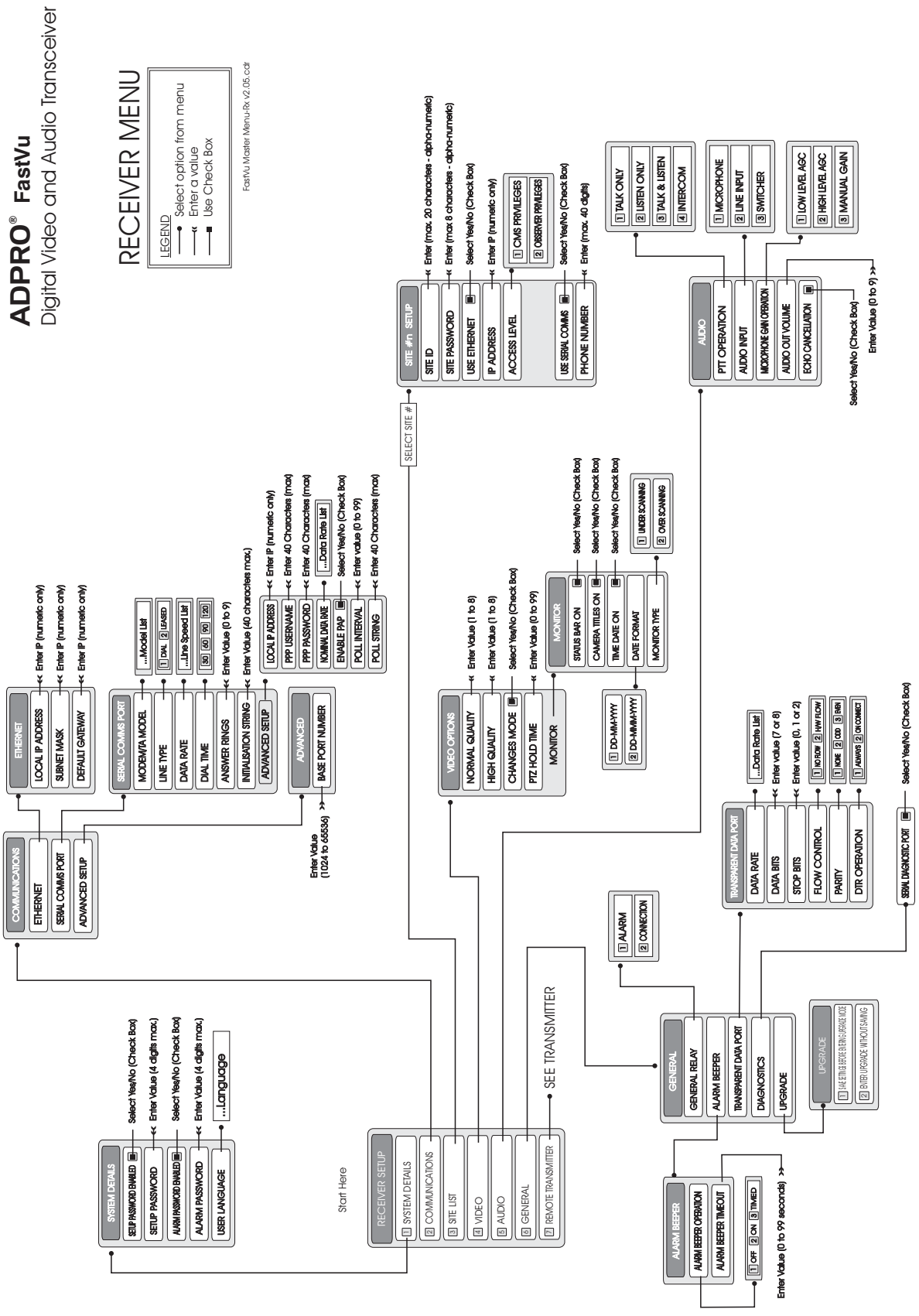


Figure 2-4 - FastVu Receiver menu structure

2.9 System Details Menu

The System Details menu is used to configure the FastVu password operation and User language option.

2.9.1 Passwords

To prevent unauthorised access to the FastVu functions, passwords can be selected and enabled.

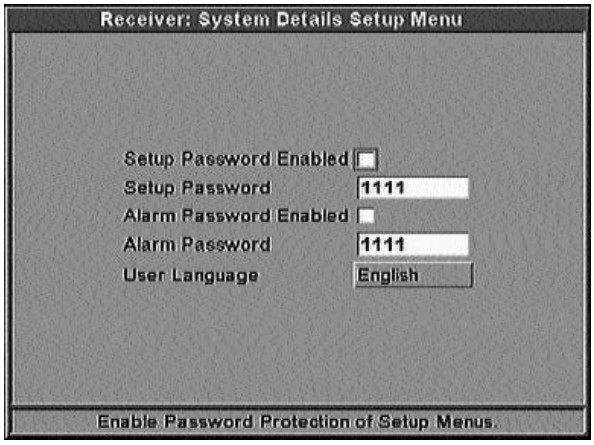


Figure 2-5 - System Details menu

2.9.1.1 Setup Password

- To enable the forced use of a Setup Password, highlight the checkbox and press ***Enter***.
- Enter the required Setup Password by using the keyboard pop up dialog box. Maximum 4 digits (no letters).

When the ***Setup*** key is pressed on the AMK-300 keyboard, the following ***Enter Password*** screen is displayed on the monitor. Without the correct password, the Setup Menu cannot be accessed.

2.9.1.2 Alarm Password

To prevent unauthorised access to isolate/unisolate alarms and remotely change the access/secure state of a connected transmitter, a password can be used.

- To enable the forced use of a Alarm Password, highlight the checkbox and press ***Enter***.
- Enter the required Alarm Password by using the keyboard pop up dialog box. Maximum 4 digits (no letters).

2.9.2 User Language

The option to choose from a number of languages for display of **Setup** information is available.

Figure 2-6 - Setup Language options

Languages available include; English; English (US Spelling); German; French; Italian; Spanish; Portuguese; Simplified Chinese and Korean.

2.10 Communications Menu

Access to the Communications configuration information is available via the Communications menu.

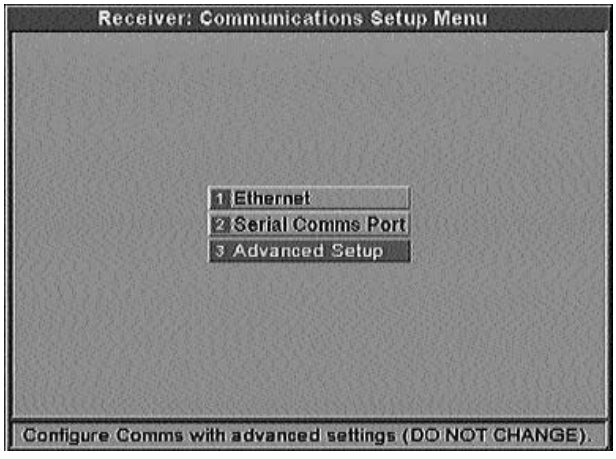

Receiver: Communications Setup Menu
1 Ethernet
2 Serial Comms Port
3 Advanced Setup
Configure Comms with advanced settings (DO NOT CHANGE).

Figure 2-7 - Communications menu

2.10.1 Ethernet Setup

The Ethernet setup menu is used to configure the basic TCP/IP parameters required when using FastVu over a LAN or WAN network connection.

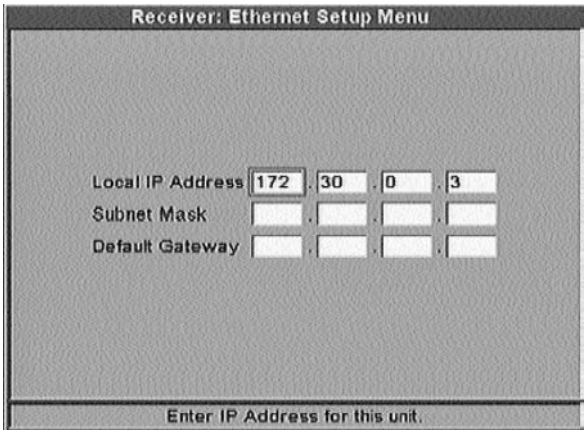


Figure 2-8 - Ethernet Setup Menu

2.10.1.1 Local IP Address

Options: Default for Receiver = 172.30.0.3

The Local Address is used to identify the FastVu device as a TCP/IP host. Each FastVu unit requires a unique IP (Internet Protocol) address. The address is divided into four (4) separate parts, each with a decimal range value from 0 to 255.

2.10.1.2 Subnet Mask

FastVu uses the subnet mask to determine whether the destination FastVu unit is located on a local or a remote network.

Each logical IP Address has two parts: the **Network ID** and the **Host ID**. The Network ID identifies all hosts that are on the same physical network and the Host ID identifies a specific host on the network.

The subnet mask is used to filter (mask) the portion of the IP Address that is common to the network and thus allow individual hosts to be accessed.For example 172.30.255.255 is a valid subnet mask.

2.10.1.3 Default Gateway

For communication with a FastVu Receiver located on another network, the FastVu unit must be given the address of the first host device on the route to the destination network (and visa versa). The default gateway is the address of the host to which the FastVu sends packets that are destined for the remote network.

If a default gateway is not specified, communication is limited to the local network.

2.10.2 Serial Comms Port Setup

The Serial Comms Port option is used by FastVu to provide serial communications with other sites. This menu allows the User to set the operating parameters of 'Port 2' to match with the model of modem or terminal adaptor used to provide the link.

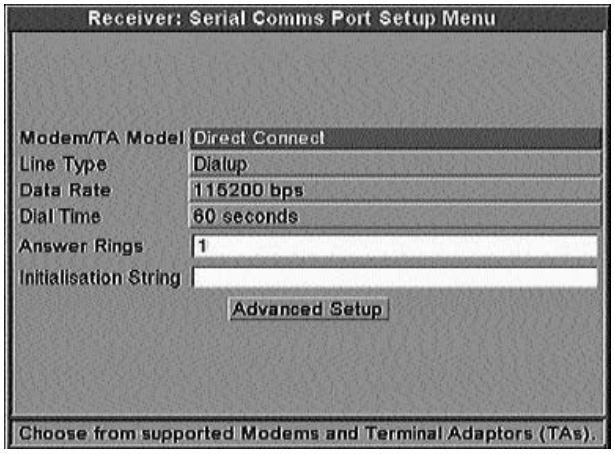


Figure 2-9 - Serial Comms Port Setup Menu

2.10.2.1 Modem/TA Model

Options: See the Model List

Defines the model of the modem or terminal adapter connected to the Serial Comms port. Use the device's user manual to assist in setting the correct configuration to suit the FastVu Serial Comms port requirements.

Use the **Direct Connect** option when FastVu units are connected 'back-to-back' (wired directly) and no modem or TA is used.

2.10.2.2 Line Type

Options: Dial, Leased.

Set the Line Type option to ***Leased*** at both the Transmitter and Receiver if the system is connected via dedicated (or leased) telephone lines or digital communication networks.

The ***Dialup*** option is used on a PSTN or digital network when no permanent connection between FastVu units exists.

2.10.2.3 Data Rate

Options: External, 9600, 19200, 38400, 57600, 115200, 230400.

The Data Rate determines the data transfer type and data rate between the Fast Scan and the modem or communication interface.

When connected to modems, FastVu is normally programmed for asynchronous data at a specific baud rate. Set the Data Rate at the Transmitter and Receiver to the maximum rate which the modem can be programmed. It is commonly referred as the DTE to DCE baud rate.

2.10.2.4 Dial Time

Options: Wait for 30 seconds, 60 seconds, 90 seconds, 120 seconds

The Dial Time is the maximum time FastVu waits to establish a communication link after dialling. The Dial Time starts from the instant the dial procedure is initiated. The time can be changed in 30-second increments. It is important that the chosen value takes into account the time required to dial the number and the number of ***Answer Rings*** programmed in the unit at the other end.

A typical value is 60 seconds for the dial network and 30 seconds for the ISDN network.

2.10.2.5 Answer Rings

Options: 0 to 9, (0 = Don't Answer)

Both the Transmitter and Receiver can be programmed to either:

a. wait for a programmable number of rings from 1 to 9, in one ring increments, before answering an incoming call, or
b. not answer any incoming calls (when set to 0).

For example, the Transmitter could be set to 'Answer Rings = 0' when the User does not want a Receiver looking at a particular site unless called by the generation of an alarm. Generally the Answer Rings option would be set to 1 or 2 rings.

2.10.2.6 Initialisation String

This option is used to enter up to 40 additional Hayes AT command characters (in ASCII format) required to automatically configure a modem or Hayes compatible RS232 terminal adaptor for a particular feature or setting.

Hayes AT commands are entered using the 'keyboard' entry screen that appears when the Initialisation String option is selected. Note that the Hayes command prefix ('AT') does NOT have to be entered at the start of an Initialisation String, as it is automatically prefixed to the string contents by FastVu.

2.10.3 Advanced Serial Port Setup

A number of advanced communications features are available including Point-to-Point Protocol (PPP) which is a special type of IP (Internet Protocol) used for data transfer over serial comms links and Secure Poll, used for high level security.

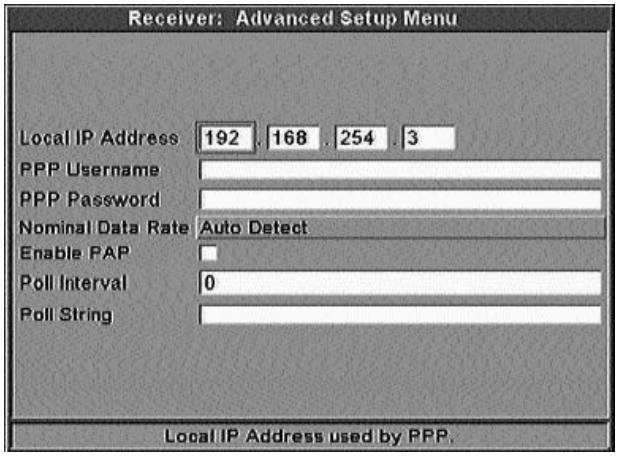


Figure 2-10 - Advanced menu

The options available are:

2.10.3.1 Local IP Address

Sets the IP Address of the FastVu Receiver for the PPP connection.

2.10.3.2 PPP Username

The Username (or Site Name) that will be used to contact this Receiver. It is only required when PAP is enabled by either the Transmitter or Receiver system.

2.10.3.3 PPP Password

The Password to be used to access this Receiver. It is only required when PAP is enabled by either the Transmitter or Receiver system.

2.10.3.4 Nominal Data Rate

Options: Auto Detect, 8, 16, 32, 64, 128, 256, 512kbps, 1Mbps, 2Mbps

The Nominal Data Rate option is used by FastVu to maximise the data rate on the communication link. It does so by setting the buffer size to suit the typical data rates to be expected. Note that the nominal data rate is different from the ***Data Rate*** setting for the Modem /TA. This option helps Users provide consistency in the image transmission time of the system, especially when the line quality of a communications link is unknown.

The Nominal Data Rate should be set to either ***auto detect*** or set to the known speed of the communications network. For example, use the '128 kbps' option when connected via a Basic Rate ISDN line.

2.10.3.5 Enable PAP

Use this checkbox to set (enable) Password Authentication Protocol. This will force the remote system to be authenticated using PAP during the PPP negotiations. The valid username and password are defined by the fields of PPP Username and PPP Password.

2.10.3.6 Secure Poll

Secure poll allows the FastVu to support a high-level security feature available in particular Modems and Terminal Adaptors (TA). This feature establishes an off-line 'heartbeat' link between the modem (or TA) and the Receiver. The link is initiated and held active by the FastVu sending (polling) a pre-defined message at a regular time interval.

The modem or TA monitors the status of the link and if the link is broken for any reason (no message received from the FastVu), the exchange equipment is notified via an unsolicited error message. The client can then be informed so that corrective action can be initiated.

Poll Interval
Options: 0 (= off) and 1 to 99 seconds.

The poll interval is used to specify the time (in seconds) between (repeated) sendings of the ***Poll String*** to the modem or TA equipment. The default value = 0.

Poll String
Options: Maximum 40 characters

The poll string command that is required by the modem or TA is entered via the on screen keyboard. The default value = blank.

2.10.4 Advanced Setup - Base Port Number

Options: <value> Range is 3000 to 30000

Defines the Base Port Number used for communications when connected to another third-party (non-FastVu) device.

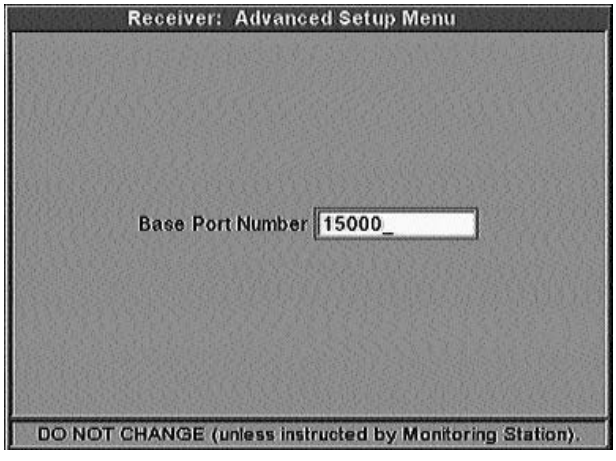


Figure 2-11 - Base Port menu

The default value = 15000 and should be left at this value unless a conflict occurs due to network connection of other third-party equipment.

WARNINGS

If the Base Port Number is changed, then all communicating systems must be changed to the same value. Failure to do this on all communicating systems **will** result in communications failure.

2.11 Site List Setup

Selecting the Site List option from the main Setup Menu displays the menu shown in Figure 2-12. The Site List menu is used to establish and maintain the list of remote sites that the FastVu Receiver will use to establish connections.

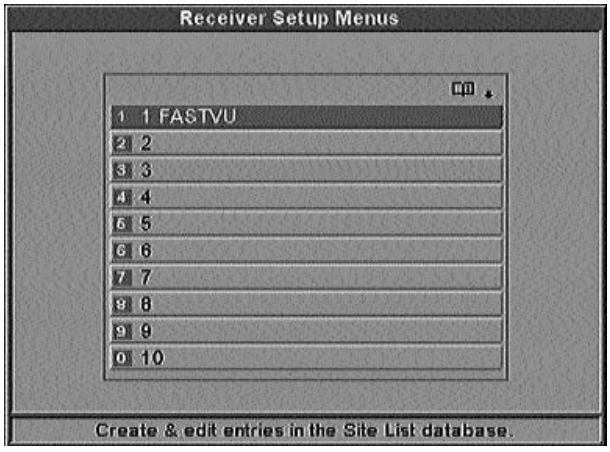


Figure 2-12 - Site List Setup menu

To enter or edit details about a particular site, select the Site Name from the list. Use the PAGE Page key to select sites 11 thru to 100.

A Site Details menu, as shown in Figure 2-13 will be displayed when a site is selected.

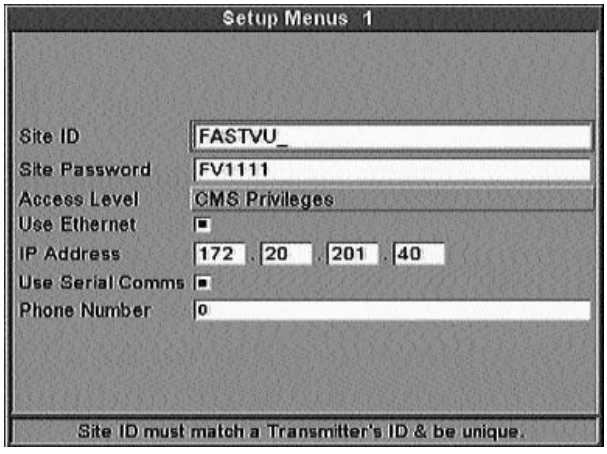


Figure 2-13 - Site Details Setup menu

2.11.1 Site Name

Options: <site name - maximum 8 characters>

The Receiver can be programmed to connect to any one of the 100 sites in the Site List. Each site must have a unique Site Name.

In operation, only a list of Site Names is displayed when the user selects the Connect option. The Site Name held in the Receiver site list **must** match the associated Site Name programmed into the Transmitter.

2.11.2 Site Password

Options: <site password - maximum 8 characters>

For a communication link to be established between the Transmitter and Receiver, the Receiver's Site Password must match exactly with the Transmitter's Site Password. This includes all characters and numbers, **including any spaces**.

2.11.3 Access Level

Options: CMS Privileges, Observer Privileges

CMS Privileges Select this option when a CMS Password has been entered at a Transmitter. CMS Privilege allows the display and resetting of alarms.

Observer Privileges Used for viewing of live video and guard tours of remote sites. Does not allow resetting of alarms, and will be disconnected when an alarm occurs.

2.11.4 Use Ethernet

Options: Yes, No

When a FastVu Receiver connects to a Site, it can do so by using one of its two communications link alternatives, the Ethernet or the Serial Comms Port. If the ***Use Ethernet*** option is enabled, connection to the remote site can be attempted via the LAN/WAN.

To enable the Ethernet connection feature, select the ***Use Ethernet*** checkbox and press **Enter**.

2.11.4.1 IP Address

Options: <IP Address>

The correct IP Address for the remote site must be entered. If the ***Use Ethernet*** checkbox is disabled, then the IP Address input field is also disabled (greyed out).

2.11.5 Use Serial Comms

Options: Yes, No

When a FastVu Receiver connects to a Site, it can do so by using one of its two communications link alternatives, the Ethernet or the Serial Comms Port. If the ***Serial Comms*** option is enabled, connection to the remote site can be made via the Port 2 connector on the rear panel.

2.11.5.1 Phone Number

Options: <telephone number> maximum 40 digits

The correct telephone number for the remote site must be entered. If the ***Serial Comms*** checkbox is disabled, then the Telephone Number input field is also disabled (greyed out).

Note 1 - Dial Pause: Some telephone systems require a digit to be dialled followed by a short pause to gain access to an outside line. In such cases, the comma (,) in the character table is used to provide a pause between two digits in a telephone number. The pause duration is dependent on the modem type but typically ranges from 2 to 5 seconds. Refer to the modem manual for details.

Note 2 - Pulse/Tone Dialling: To make some modems force a tone or pulse dial string, place a 'P' (for Pulse) or 'T' (for Tone) in front of the phone number. For example 'P83004400' to force a pulse dial string. These additional characters are required on occasions where there is no suitable AT command that the modem will recognise. Therefore, the command must be set at the time of dialling.

2.12 Video Setup

Selecting Video Options setup menu displays the menu shown in Figure 2-14. The Video Options menu affects the way images are presented on the monitor.

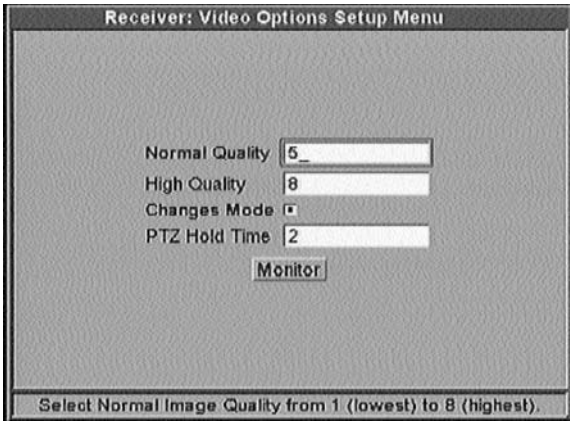


Figure 2-14 - Video Options Setup menu

2.12.1 Normal Quality

Options: <normal picture quality> Range 1 to 8

The *Normal Quality* value determines the quality of the images observed on the Operator's monitor during general operations. The range is from 1 to 8, with 8 being the highest quality.

By default, FastVu will use the Normal Quality setting when a camera is selected. If the User chooses to change the display quality (with the 'Quality' key), then on completion of the current operation (for example, after using PTZ) FastVu will again revert to the Normal Quality setting.

As the Quality level is set nearer to 1, the picture update rate reduces, while the image quality also reduces. Overall, update times will be dependant on the bandwidth available on the Network or Serial Comms channel. The actual Quality level selected will depend on what needs to be identified in the field of view of the cameras and the desired picture update time. Refer to Table 2-1 for the image resolution of various quality levels.

Quality value	PAL Resolution	NTSC Resolution	Quality Displayed
1	176 x 144 pixel	176 x 120 pixel	Small image - v-low
2	176 x 144 pixel	176 x 120 pixel	Small image - low
3	352 x 288 pixel	352 x 240 pixel	Low
4	352 x 288 pixel	352 x 240 pixel	Medium
5	352 x 288 pixel	352 x 240 pixel	High
6	352 x 288 pixel	352 x 240 pixel	Very High
7	704 x 288 pixel	704 x 240 pixel	Very, Very High
8	704 x 576 pixel	704 x 480 pixel	Excellent

Table 2-1 - Quality Value versus Resolution

When alarm sequences are stored at the Transmitter, the actual image resolution of the stored alarm images is Quality Level 7. The Quality Level requested by a user at the Receiver can be from 1-8 with the highest level reserved for live viewing of images.

2.12.2 High Quality

Options: <high picture quality> Range 1 to 8

The user can request images to be transmitted at a higher quality level, as set by the High Quality value. Image quality can be switched between the Normal and High Quality values by pressing the ***Quality*** key .

The High Quality range is from 1 to 8, with 1 being the lowest quality.

The High Quality option assists with identification of intruders by improving the displayed picture quality.

2.12.3 Changes Mode

Changes Mode determines whether the entire image or only changing portions of the image from a channel are updated. The first image viewed from a channel is transmitted in its entirety. Subsequently, only the changing portions of the image are transmitted. This can significantly reduce the picture update time depending on the proportion of the image which changes. Note that at lower image quality levels, some motion 'trails' may be seen.

However, if the size of the object to be tracked is extremely small with respect to the field of view of the camera, then Changes Mode should not be enabled.

To enable Changes Mode of operation, select the ***Changes Mode*** checkbox and press ***Enter***.

2.12.4 PTZ Hold Time

Options: <hold time in seconds> Value between 0 and 99 seconds

The PTZ Hold Time is used by the FastVu Receiver to determine the length of time the PTZ screen display will be maintained after the last Pan, Tilt or Zoom operation is completed. The Hold Time value also applies when the **focus** function is used. The Hold Time allows minor adjustments to be made to the PTZ camera position before the normal screen is displayed.

The ***Hold Time*** is programmable from 0 to 99 seconds. It would generally be set from 2 to 5 seconds. When the ***Hold Time*** is set to '0 seconds' the system does not use the special PTZ display mode, allowing the system to fully utilize a high speed (bandwidth) communications link.

2.12.5 Monitor Setup

The Monitor Setup menu configures the User's preferred display settings on the FastVu monitor.

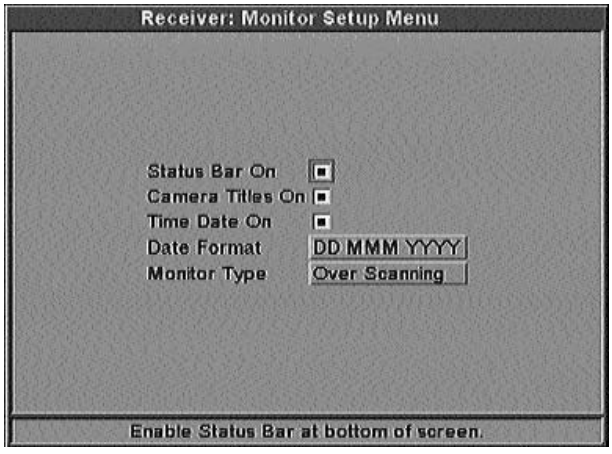


Figure 2-15 - Monitor Setup Menu

2.12.5.1 Status Bar On

Displays the status of the FastVu features such as the Site Name, current image quality, access/secure state and audio state. Refer to Figure 2-16.

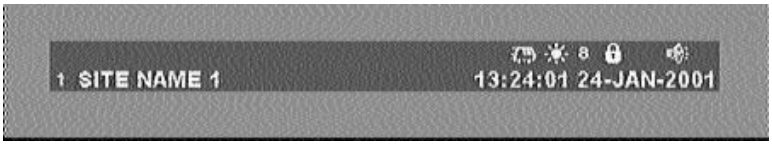


Figure 2-16 - Status Bar Display

To enable the display of the Status Bar, select the ***Status Bar On*** checkbox and press ***Enter***.

2.12.5.2 Camera Titles On

To enable the display of Camera Titles, select the **Camera Titles On** checkbox and press ***Enter***.

2.12.5.3 Time Date On

To enable the display of Time and Date information, select the ***Time Date On*** checkbox and press ***Enter***.

2.12.5.4 Date Format

Options: DD-MM-YYYY, DD-MMM-YYYY

When *Time Date On* has been enabled, the Time Date Format menu becomes active. The date, in the selected format, is displayed on the monitor. Three options are available to set the system date format:

- DD-MM-YYYY. Format is **day** (1 to 31) - **month** (01 to 12) - **year** (4-digits)
- DD-MMM-YYYY. Format is **day** (1 to 31) - **month** (JAN to DEC) - **year** (4-digits)

2.12.5.5 Monitor Type

Options: Under Scanning, Over Scanning

The Monitor Type allows the correct monitor scanning feature to be selected.

Over scanning monitors tend to have the edges of the picture display outside the visible area of the screen. Underscanning monitors will display all picture edges within the visible area of the screen.

2.13 Audio Setup

Selecting Audio from the main Setup Menu displays the menu shown in Figure 2-17. The Audio menu configures the FastVu audio channel features.

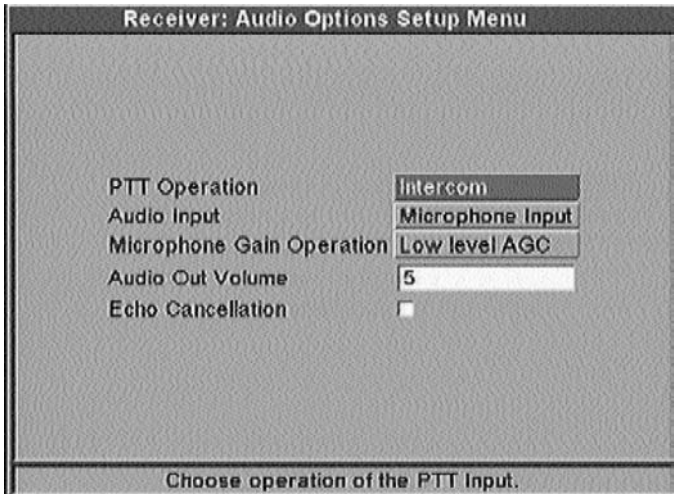


Figure 2-17 - Audio Setup menu

FastVu supports combined video and audio operation over communication links with a minimum data throughput of 14.4 kbps. This provides simultaneous video and audio operation, with an audio bandwidth of 300-3KHz, over standard public switched telephone networks (PSTN) as well as high speed digital networks.

Although FastVu always passes audio at the maximum possible bandwidth, the overall audio quality will ultimately depend on the quality of the microphones and speakers connected to the FastVu and the level of background noise in the environment. Tests should always be performed with the desired audio equipment to obtain an understanding of the audio performance.

2.13.1 PTT Operation

Options: Talk Only, Listen Only, Talk and Listen, Intercom

This defines the type of Audio operation of the system and how a Push-To-Talk (PTT) switch (when it is connected , to the PTT input on the Receiver) will control the Audio operation.

The PTT input, located on Pin 13 of the ‘Audio Switch” connector, is ‘non-active’ when the input has an open contact. (i.e no connection). When a closed contact is applied between the PTT input and Ground, the PTT switch is treated as being ‘active’.

The options are as follows:

2.13.1.1 Talk Only

Enables audio from the Receiver to the Transmitter when the PTT switch is ‘active’ (closed contact). When activated, the ‘microphone’ icon appears on the menu bar.

2.13.1.2 Listen Only

Enables audio from the Transmitter to the Receiver when the PTT switch is 'active' (closed contact). When activated, the 'speaker' icon appears on the menu bar.

2.13.1.3 Talk and Listen

Audio is always enabled in both directions.

2.13.1.4 Intercom

Used in conjunction with the Audio key on the keyboard.

When the *Intercom* option is selected via the menu and the ***Audio*** key is pressed, audio transmissions will be enabled and audio will be sent *in the direction defined by the current position of the PTT switch*.

Pressing the ***Audio*** key again will turn off **all** audio.

2.13.2 Audio Input

Options: Microphone Input, Line Input, Switcher

Select the type of audio input device connected to the FastVu unit. The Switcher option is used when the FastVu audio is being selected (switched) via the VM22A or third-party audio switching unit.

2.13.3 Microphone Gain Operation

Options: Low Level AGC, High Level AGC, Manual Gain

Select the type of Automatic Gain Control (AGC) used by FastVu to maintain a constant audio input range.

Low Level AGC is typically used in a more controlled noise environment, such as a Control Room or office, where only a small amount of background noise is present. High Level AGC would be used where high levels of background noise can be expected. Microphone locations such as car parks and street environs would probably use this option.

Manual gain should be used when the PTT 'Intercom' option is selected as it provides better control over audio where echo cancellation cannot be used.

2.13.4 Audio Out Volume

Options: <volume level>

Choose a volume level between 0 (lowest) and 9 (highest) to suit the operational environment.

2.13.5 Echo Cancellation

Options: On, Off

This feature is used to diminish audio echoes when two-way conversations are taking place, especially when using a 'speaker-phone', where the microphone and speaker are in close proximity to each other. Echo cancellation is performed by special software in the FastVu unit.

To enable the Echo Cancellation feature, select the ***Echo Cancellation*** checkbox and press ***Enter***.

NOTE

Echo cancellation should not be used in conjunction with any AGC operation in the FastVu unit, VM22A or third-party audio switcher.

2.14 General Setup

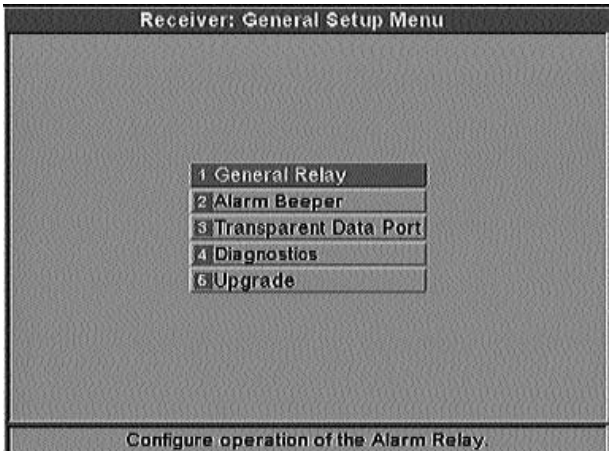


Figure 2-18 - Receiver General Setup menu

2.14.1 General Relay

Options: Alarm, Connection

The General Relay can be set to become active when either an alarm is active or the FastVu is online. The General Relay has a default to the ALARM option.

When activated, the contacts of the General Relay will changeover.

2.14.2 Alarm Beeper Operation

Options: Off, On, Timed

Defines the method of operation of the AMK-300 keyboard beeper.

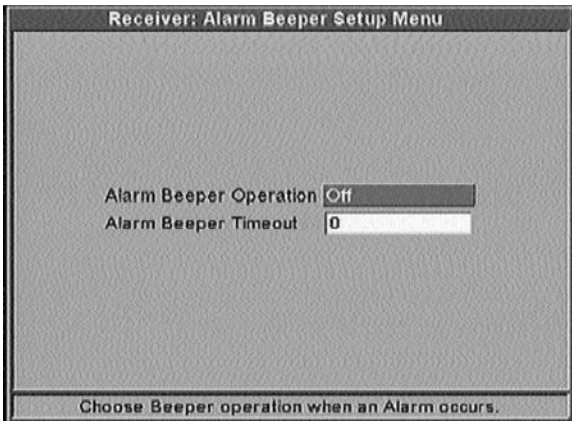


Figure 2-19 - Alarm Beeper menu

- Off - The beeper is not used.
- On - The beeper will sound when an alarm is received and will stop when the alarm is cleared.
- Timed - The value set in the ***Alarm Beeper Timeout*** option is used.

2.14.2.1 Alarm Beeper Timeout

Options: <period> 0 to 99

The **Alarm Beeper Timeout** option determines the time in seconds that the AMK-300 keyboard beeper sounds after an alarm is triggered. The range is from 0 to 99 seconds, where 0 is used to disable the beeper.

> **NOTE**
>
> The beeper is restarted for the programmable period each time a new alarm appears in the system.

2.14.3 Transparent Data Port Setup

FastVu allows the operation of 3rd-party RS-232 based equipment via the Transparent Data Port.

For example, a 3rd-party video matrix switcher needs to be controlled via its own proprietary RS-232 keyboard. Using the Transparent Data Port, the keyboard is connected to the FastVu Receiver at a central site while the matrix switcher is connected to the Transparent Data Port at the remote Transmitter. When the remote site is accessed via the FastVu link connection, data from the keyboard is passed transparently to the matrix switcher for direct control of the unit.

The Transparent Data Port setup menu is used to configure the parameters required for the RS-232 link.

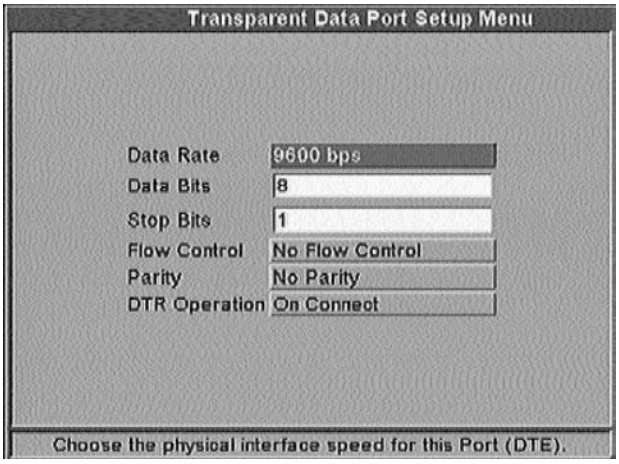


Figure 2-20 - Transparent Data Port Setup Menu

2.14.3.1 Data Rate

Options: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600bps

The Data Rate determines the local data transfer rate between the RS232 interface and the connected equipment.

2.14.3.2 Data Bits

Options: 7, 8

Sets the number of Data Bits used to transfer data locally between the RS232 interface and the connected equipment. It can be set to either 7 or 8 data bits.

2.14.3.3 Stop Bits

Options: 1, 2

Sets the number of Stop Bits used when transferring data locally between the RS232 interface and the connected equipment. It can be set to either 1 or 2 stop bits.

2.14.3.4 Flow Control

Options: No Flow Control, Hardware Flow Control

Enables Flow Control for transfer of data locally between the RS232 interface and the connected equipment. Hardware handshaking (CTS, RTS) can be selected to be on or off.

When using the RS232 interface as a bi-directional link, setting the ***No Flow Control*** option causes FastVu to disregard the RTS/CTS signalling lines.

2.14.3.5 Parity

Options: No Parity, Odd Parity, Even Parity

Sets the Parity used when transferring data locally between the RS232 interface and the connected equipment.

2.14.3.6 DTR Operation

Options: Always, On Connect

This option allows the User to control the operation of the Data Terminal Ready (DTR) signal of the RS-232 line to best suit the intended operation of the 3rd-party equipment.

When set to ***Always***, the DTR signal will be permanently asserted by the FastVu Transparent Data Port. The ***On Connect*** option only asserts the DTR signal after connection between the FastVu Transmitter and Receiver is established.

2.14.4 Diagnostics

This is a **FACTORY** set feature. **DO NOT** use or select this option unless instructed to do so by ADPRO Technical Support personnel.

2.14.5 Upgrade

The software used by FastVu can be upgraded by transferring a new program from a PC using either Port 1 or the Network Port on the rear of the FastVu unit. Details of the upgrade procedure are given in the 'FastVu Software Upgrade Booklet' that accompanies the upgrade CD-ROM program.

> **NOTE**
>
> That the CONFIGURATION Dipswitch #10 must be set to the ON position when upgrading via Port 1.

Before entering the software Upgrade process, the User is given the option of saving current setup information as shown in Figure 2-21.

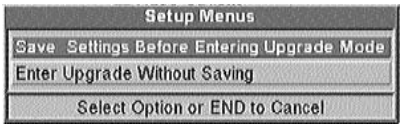


Figure 2-21 - Upgrade Setup Menu

- ***Save Settings Before Entering Upgrade Mode*** - the current setup configuration is saved as a backup
- ***Enter Upgrade Without Saving*** - no setup information is saved

When a selection has been made, the status message shown in Figure 2-22 is displayed.

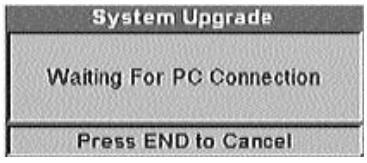


Figure 2-22 - PC Connection Message

On completion of the software upgrade, FastVu automatically powers down / up for the new program to take effect.

2.15 Remote Transmitter

When a FastVu Receiver is connected to a Transmitter at a remote site (ie on-line to the site), the *Remote Transmitter* option allows the User to remotely access the Transmitter's Setup Menus.

Selecting the ***Remote Transmitter*** option will download the Transmitter's current configuration to the Receiver for display on the monitor. During the download processing a status message is displayed.

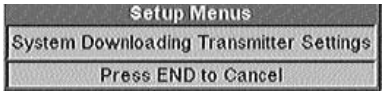


Figure 2-23 - Message for Tx Setup Download

The Transmitter setup menus can now be reviewed or edited by the User. When finished, the Transmitter settings can be saved (or discarded) by selecting the appropriate option from the exit menu as shown in Figure 2-24.

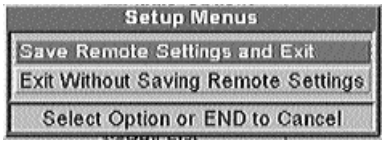


Figure 2-24 - Exit and Save Menu

- *Save Remote Settings and Exit* - the changes made are saved back into the Transmitter's memory
- *Exit Without Saving Remote Settings* - no changes are made, the Transmitter setup remains unchanged.

If the ***Save Remote Settings and Exit*** option is selected the changes are uploaded to the Transmitter and the status message shown in Figure 2-25 is displayed.

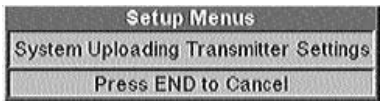


Figure 2-25 - Message for Tx Setup Upload

On completion of the transfer, the new settings for the Transmitter can be used immediately.

3.0 Transmitter Setup

3.1 Power Up

The green **Power** and the red **Status** LEDs on the front panel are lit as soon as power is applied to the unit. The FastVu immediately starts to perform internal tests to ensure both software and hardware integrity.

> **NOTE**
>
> Prior to power up, set the Configuration DIP switch on each FastVu 2020 unit to define its operation as either a Receiver or a Transmitter. Set switch #11 to 'ON' for a Receiver, 'OFF' for a Transmitter.

A successful self-test ensures all diagnostic tests have been passed and to confirm this, the red **Status** LED goes off.

> **NOTE**
>
> The self-test function may take up to 45 seconds to complete. During this period, any display on the monitor screen is not meaningful and should be ignored.

- If the self-test fails, the red **Status** LED remains **ON**.
- If the power fails, the green **Power** LED will be **OFF**.

If the diagnostic tests fail repeatedly, the user should note any details of the error and contact the ADPRO support service or the local ADPRO supplier.

3.2 Access to the Setup Menu

Setup menus are provided to quickly and easily configure the ADPRO FastVu Transmitter for operation. The menus and any associated stored parameters are held within non-volatile memory.

There are two ways of accessing the Transmitter Setup Menus.

1) Locally, by direct connection of an AMK-300 keyboard or VM87 Programmer to the FastVu Keyboard Port.

2) Remotely, by opening the menu from a FastVu Receiver or ADPRO Video Central when connected.

To operate the AMK-300 keyboard locally on a Transmitter unit, set the keyboard configuration Switch # 1 = OFF.

For local access and keyboard connection, refer to Section 1.0 for cable information and other keyboard configuration settings.

3.2.1 Local Setup

When the FastVu Transmitter is to be accessed **locally**, to view the Setup menu, a monitor must be connected to Video Out (or S-Video) connector. Ensure the monitor is correctly connected, power is available and the unit is switched on. There are two ways to access locally the Setup Menus.

- The AMK-300 external keyboard. Plug the keyboard into the Keyboard port on the rear panel.
- The VM87 Hand-Held Programmer. Plug the VM87 into the Keyboard port on the rear panel.

3.2.2 Remote Setup

A Transmitter may also be accessed from a FastVu Receiver or Video Central located away from the site. They must be on-line to access the Transmitter's Setup Menu. When the Receiver is used to configure the Transmitter, no monitor is required at the Transmitter.

3.2.3 Local Setup Menu Access

To locally access the Setup menu, first ensure the FastVu unit has successfully completed the power up diagnostic tests.

Press the ***Setup*** key on the AMK-300 or VM87 to enter setup mode.

Password checking to the Setup Menu is either:

- **Disabled** when no password protection is required or
- **Enabled** requiring a password to be entered

If password checking has been enabled, use the keyboard to enter the four-digit, numeric only password. The factory default password = **1111**.

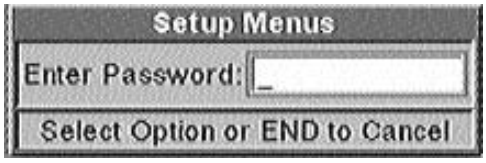


Figure 3-1 - Password Entry Dialogue

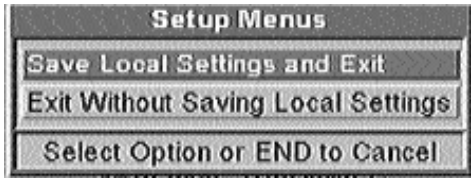
If password checking has been enabled and an incorrect password is entered, the keyboard will double-beep and an **Invalid Password** dialogue box will be displayed. If a password is lost or forgotten, refer to the Troubleshooting Section of this manual for the correct procedure to override password checking.

-

to delete the incorrect entry
- re-enter the correct password.

3.2.3.1 Leaving Local Setup

When changes to the setup parameters are completed, leaving the local Setup menu will prompt the User to save the current settings (including any changes that have been made). Exit from Setup may take up to 8 seconds.



Options available for any changes to Setup is either:

- **Save Local Settings and Exit** — Changes are stored in the FastVu NVRAM permanent memory and are immediately available for use
- **Exit Without Saving Local Settings** — Changes are discarded and 'last stored' setting is used.

3.2.4 Remote Setup Menu Access

When a Transmitter has successfully connected on-line to a FastVu Receiver, access to the Transmitter's Setup Menus is available via the Receiver. Changes can be made to the Transmitter Setup remotely and then reloaded and stored back within the Transmitter's memory.

When a FastVu Receiver is connected to a Transmitter (ie on-line to the site), the Receiver's ***Remote Transmitter*** option allows the User to remotely access the Transmitter's Setup Menus.

Selecting the Receiver's ***Remote Transmitter*** option will download the Transmitter's current configuration to the Receiver for display on the monitor. When the Transmitter is under remote menu control by a Receiver, a status message is displayed on the local monitor connected to the Transmitter.

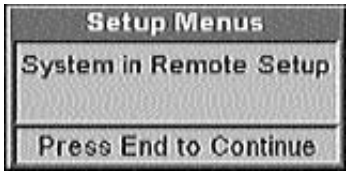


Figure 3-2 - Remote Access Message

The Transmitter setup menus can now be reviewed or edited at the Receiver. When finished, the Transmitter settings can be saved (or discarded) by selecting the appropriate option from the Receiver's exit menu as shown in Figure 3-3.

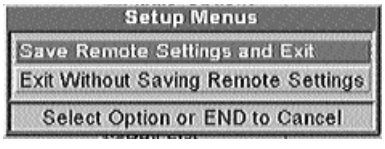


Figure 3-3 - Receiver's Exit and Save Menu

The Receiver options available are:

- ***Save Remote Settings and Exit*** - the changes made are saved back into the Transmitter's memory
- **Exit Without Saving Remote Settings** - no changes are made, the Transmitter setup remains unchanged.

If the *Save Remote Settings and Exit* option is selected the changes are uploaded to the Transmitter and the status message shown in Figure 3-4 is displayed at the Receiver.

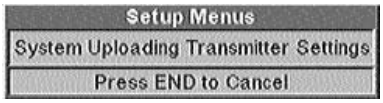


Figure 3-4 - Receiver Message for Transmitter Upload

On completion of the transfer, the new settings for the Transmitter can be used immediately. At this point the Receiver will still be in Setup mode and actions for saving the Local settings must be taken before the system can be used operationally.

3.3 Setup Menus

The setup menus provide access to a number of sub-menus for configuration to suit individual site requirements.

Within each major group, all parameters associated with that group are available for configuration. Any previously entered (or factory default) parameters are shown for review.

Parameters that are capable of being changed are altered by selecting from a list or option, or by directly entering a data value.

Once a parameter is altered, the user can exit from the setup mode and immediately use the new values.

3.3.1 Using the Menu System

The FastVu menu system is navigated by using the AMK-300 keyboard or the VM87 Hand-Held Programmer:

To move between menu selections

use the keys.

To access a menu selection,

use the

key.

3.3.2 Fast Buttons

Next to some menu options, a number may be seen. The numbers are used as **Fast Buttons**. (In the example shown in Figure 3-5, there are seven Fast Buttons)

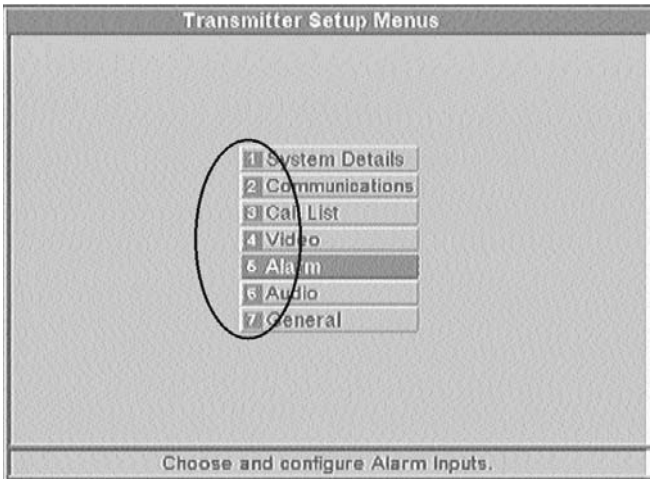
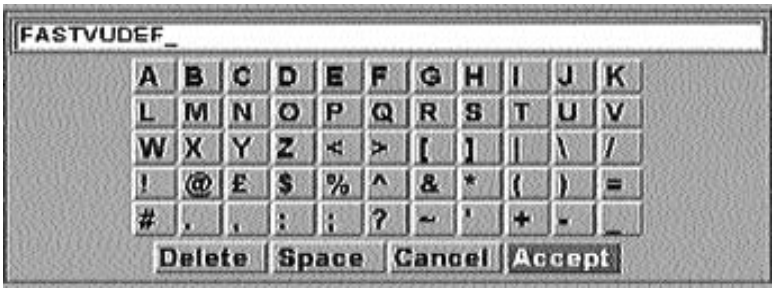


Figure 3-5 - Fast Button Numbers

To **Fast Button** a menu option, simply press the corresponding number on the keyboard.

3.3.3 Alphanumeric Names

For entry of alphanumeric names, (with both letters and numbers), a special Pop-up window is used:



Use the following procedure to enter characters from the virtual keyboard.

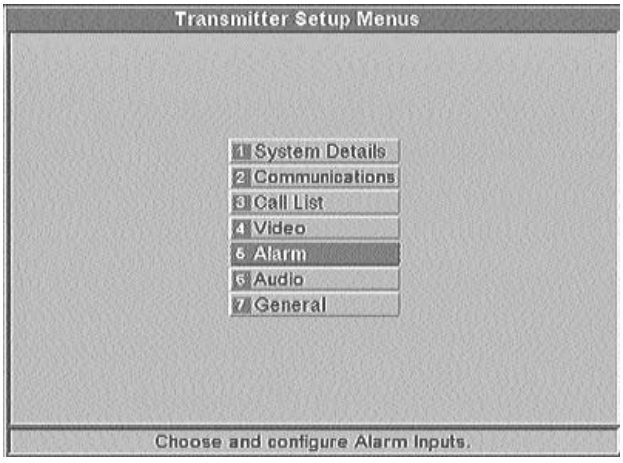
- Use to highlight (blue background) the required letter or symbol.
- Press to place it on the assembly bar
- To enter a number into the name, simply press the corresponding number key on the keyboard.
- To finish and accept the name on the assembly bar, highlight the ***Accept*** button or press
- If a mistake is made, either:
  - use the ***Delete*** button to erase the last letter or symbol or
  - use the key to erase ALL characters.

3.4 Setup Menu Structure

Programmable parameters are entered or altered via a menu-based system. The menu structure consists of a number of levels and sub-menus. The applicability of some menu or sub-menu options can be affected by the setting(s) of other options. Refer to Figure 3-6 for a diagram of the FastVu menu structure.

Access to the Setup Menu is available directly from the unit, or in the case of a remote Transmitter, the Setup menu can be 'downloaded' and viewed from a central Receiver. This is very useful when access to a number of remotely located Transmitters is required.

The Transmitter Setup menu is shown below:



Please refer to the Menu structure diagram for a complete overview of the FastVu menu structure.

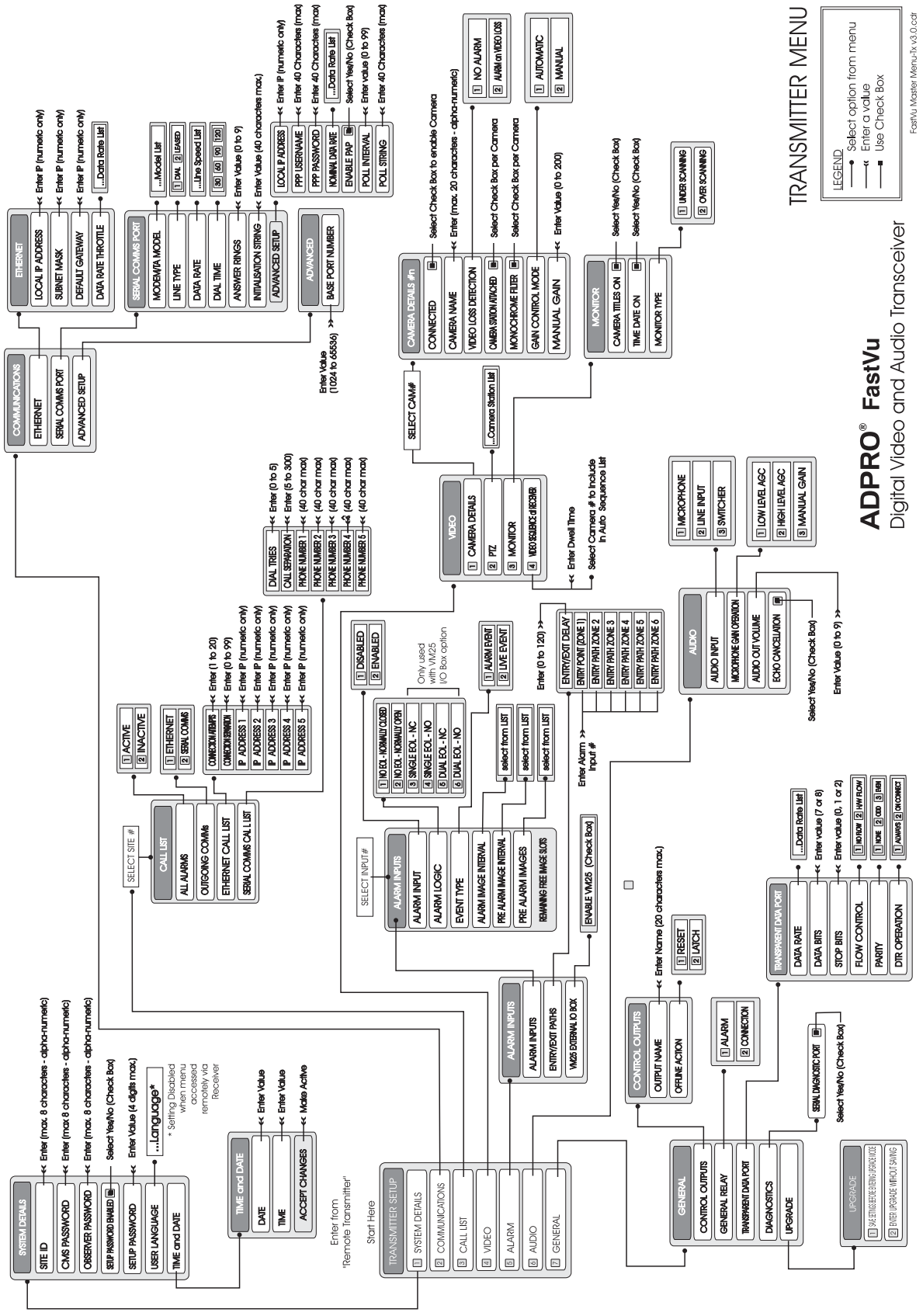


Figure 3-6 - FastVu Transmitter menu structure

3.5 System Details

Selecting the ***System Details*** option from the main Setup Menu displays the menu shown below.

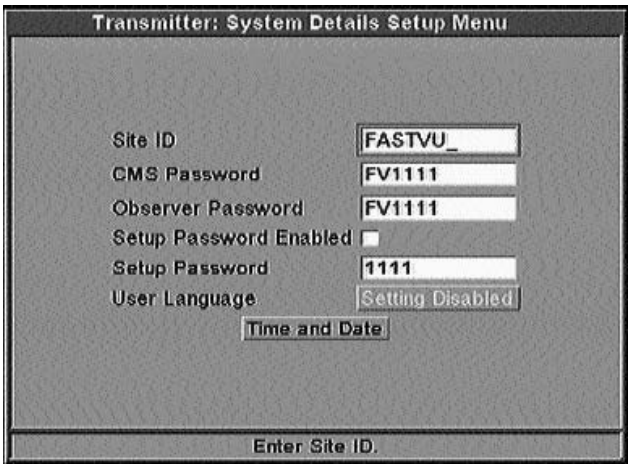


Figure 3-7 - System Details Setup menu

3.5.1 Site Name

Options: <site name>

Each Transmitter must have a unique Site Name. Maximum site name length is 8 characters.

The site name programmed in the Transmitter **must** match the **Site Name** defined by an entry in a Receiver's Site List.

3.5.2 CMS Password

Options: <cms password> - maximum 8 characters

The ***CMS Password*** is used when the **CMS User** option is used (refer to Section 4.11.1).

3.5.3 Observer Password

Options: <observer password> - maximum 8 characters

For general access, the Observer Password is used. The observer password programmed in the Transmitter **must** match the **Password** defined by an entry in a Receiver's Site List.

3.5.4 Setup Password

To prevent unauthorised local access to the FastVu Setup Menus, a password can be set. When the ***Setup*** key is pressed on the AMK-300 keyboard that is locally connected to the Transmitter or via the remote keyboard connected to a Receiver, the following **Enter Password** screen is displayed on the monitor (refer to Figure 3-1). Without the correct password, the Setup Menu cannot be accessed.

- To enable the forced use of a Setup Password highlight the ***Setup Password Enable*** checkbox and press ***Enter***.
- Enter the required Setup Password by using the keyboard pop up dialog box. Maximum 4 digits (no letters).

3.5.5 User Language

When the Transmitter Setup menu is accessed **locally**, the option to choose from a number of languages for display of **Setup** information is available. This option is **Disabled** if the menu is accessed via a remote Receiver.

Figure 3-8 - Setup Language options

3.5.6 Time and Date

To enable accurate tracking of the time that alarm or live video is being viewed (and possible recording by a VCR), the time and date used by the Transmitter can be set (or reset).

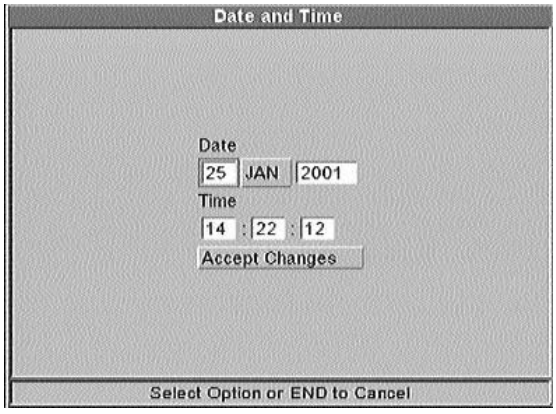


Figure 3-9 - Date and Time Setup Menu

Enter the new Date and Time into the appropriate fields on the display. Use the keyboard to directly enter the number fields and to select the appropriate month from the list.

The ***Accept Changes*** button is used to activate the new date and time in the Transmitter. When this button is clicked, the new values will take effect and the menu will exit.

NOTE

Exiting from the menu by using the ***End*** key on the keyboard will not activate the new time/date.

3.6 Communications Setup

The Communications setup menu provides access to configuration information relating to the FastVu's network and data link features.

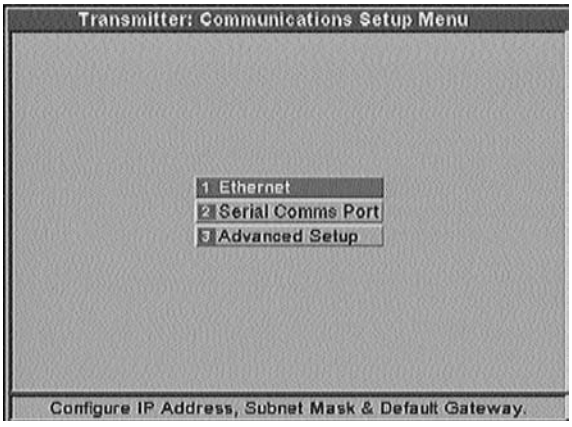

Transmitter: Communications Setup Menu
1 Ethernet
2 Serial Comms Port
3 Advanced Setup
Configure IP Address, Subnet Mask & Default Gateway.

Figure 3-10 - Communications Setup menu

3.6.1 Ethernet Setup

The Ethernet setup menu is used to configure the basic TCP/IP parameters required when using FastVu over a LAN or WAN network connection.

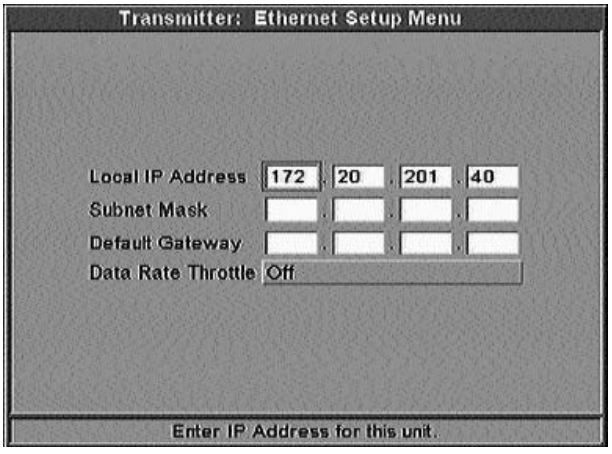

Transmitter: Ethernet Setup Menu
Local IP Address 172 . 20 . 201 . 40
Subnet Mask . . .
Default Gateway . . .
Data Rate Throttle Off
Enter IP Address for this unit.

Figure 3-11 - Ethernet Setup Menu

3.6.1.1 Local Address

Options: Default for Transmitter = 172.30.0.2

The Local Address is used to identify the FastVu device as a TCP/IP host. Each FastVu unit requires a unique IP (Internet Protocol) address. The address is divided into four (4) separate parts, each with a decimal range value from 0 to 255.

3.6.1.2 Subnet Mask

FastVu uses the subnet mask to determine whether the destination FastVu unit is located on a local or a remote network.

Each logical IP Address has two parts: the NETWORK ID and the HOST ID. The Network ID identifies all hosts that are on the same physical network and the Host ID identifies a specific host on the network.

The subnet mask is used to filter (mask) the portion of the IP Address that is common to the network and thus allow individual hosts to be accessed. For example 172.30.255.255 is a valid subnet mask.

3.6.1.3 Default Gateway

For communication with a FastVu Receiver located on another network, the FastVu unit must be given the address of the first host device on the route to the destination network (and visa versa). The default gateway is the address of the host to which the FastVu sends packets that are destined for the remote network.

If a default gateway is not specified, communication is limited to the local network.

3.6.1.4 Data Rate Throttle

Options: Off, 20, 32, 64, 128, 256, 512Kbps, 1Mbps, 2Mbps

The Data Rate Throttle provides the system with the ability to restrict the amount of Ethernet bandwidth it uses when transmitting video data to the Receiver.

This option is useful if network contraints dictate that a restricted amount of bandwidth can only be used by certain devices. Refer to the Network / System Administrator for further advice.

3.6.2 Serial Comms Port Setup

The Serial Comms Port option is used by FastVu to provide serial communications with other sites. This menu allows the User to set the operating parameters of 'Port 2' to match with the model of modem or terminal adaptor used to provide the link.

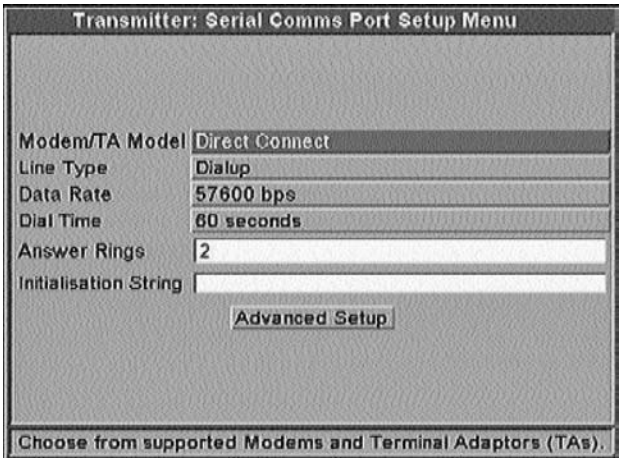


Figure 3-12 - Serial Comms Port Setup Menu

3.6.2.1 Modem/TA Model

Options: See the Model List

Defines the model of the modem or terminal adapter connected to the Serial Comms port. Use the device's user manual to assist in setting the correct configuration to suit the FastVu Serial Comms port requirements.

Use the ***Direct Connect*** option when FastVu units are connected 'back-to-back' (wired directly) and no modem or TA is used.

3.6.2.2 Line Type

Options: Dial, Leased.

Set the Line Type option to ***Leased*** at both the Transmitter (and Receiver) if the system is connected via dedicated (or leased) telephone lines or digital communication networks.

The ***Dialup*** option is used on a PSTN or digital network when no permanent connection between FastVu units exists.

3.6.2.3 Data Rate

Options: External, 9600, 19200, 38400, 57600, 115200, 230400

The Data Rate determines the data transfer type and data rate between FastVu and the modem or communication interface.

When connected to modems, FastVu is normally programmed for asynchronous data at a specific data rate. Set the Data Rate at the Transmitter (and Receiver) to the maximum rate which the modem can be programmed. It is commonly referred as the DTE to DCE baud rate.

3.6.2.4 Dial Time

Options: Wait for 30 seconds, 60 seconds, 90 seconds, 120 seconds

The Dial Time is the maximum time FastVu waits to establish a communication link after dialling. The Dial Time starts from the instant the dial procedure is initiated. The time can be changed in 30-second increments. It is important that the chosen value takes into account the time required to dial the number and the number of ***Answer Rings*** programmed in the unit at the other end.

A typical value is 60 seconds for the dial network and 30 seconds for the ISDN network.

3.6.2.5 Answer Rings

Options: 0 to 9, (0 = Don't Answer)

The Transmitter can be programmed to either:

a. wait for a programmable number of rings from 1 to 9, in one ring increments, before answering an incoming call, or
b. not answer any incoming calls (when set to 0).

For example, the Transmitter could be set to ***Answer Rings = 0*** when the User does not want a Receiver looking at a particular site unless called by the generation of an alarm. Generally the Answer Rings option would be set to 1 or 2 rings.

3.6.2.6 Initialisation String

This option is used to enter any additional Hayes AT commands (in ASCII format) required to automatically configure a modem or Hayes compatible RS232 terminal adaptor for a particular feature or setting.

Hayes AT commands are entered using the **keyboard** entry screen that appears when the Initialisation String option is selected. Note that the Hayes command prefix ('AT') does NOT have to be entered at the start of an Initialisation String, as it is automatically prefixed to the string contents by FastVu.

3.6.2.7 Advanced Setup - Serial Port

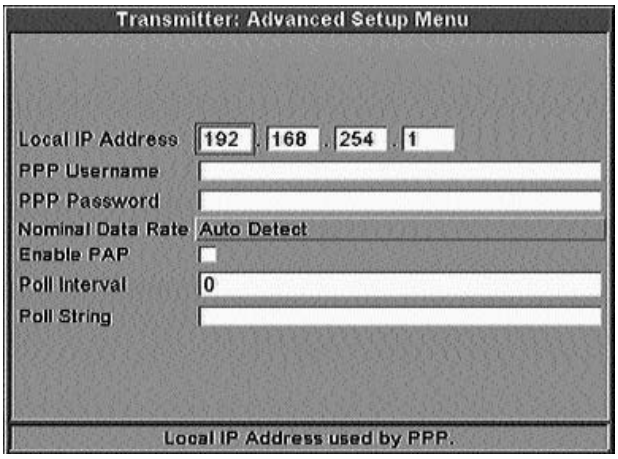


Figure 3-13 - Advanced Setup menu

3.6.2.8 Local IP Address

Sets the ***IP Address*** of the FastVu Transmitter.

IMPORTANT NOTE WHEN OPERATING WITH VIDEO CENTRAL GOLD

Video Central Gold software has the ability to dial and connect to more than one FastVu Transmitter at the same time. To ensure correct operation with Video Central, all FastVu Transmitters that are expected to be accessed simultaneously will need to have a different **Local IP Address** configured.

3.6.2.9 PPP Username

The ***Username*** (or Site Name) that will be used to contact this Transmitter. It is only required when PAP is enabled by either the Transmitter or Receiver system.

3.6.2.10 PPP Password

The ***Password*** to be used to access this Transmitter. It is only required when PAP is enabled by either the Transmitter or Receiver system.

3.6.2.11 Nominal Data Rate

Options: Auto Detect, 8, 16, 32, 64, 128, 256, 512kbps, 1Mbps, 2Mbps

The ***Nominal Data Rate*** option is used by FastVu to maximise the data rate on the communication link. It is different from the 'Data Rate' setting for the Modem /TA, in that FastVu attempts to send data at the nominal data rate specified at all times. This option helps Users provide consistency in the image transmission time of the system, especially when the line quality of a communications link is unknown.

The Nominal Data Rate should be set to either ***auto detect*** or set to the known speed of the communications network. For example, use the '128 kbps' option when connected via a Basic Rate ISDN line.

3.6.2.12 Enable PAP

Use this checkbox to set (enable) Password Authentication Protocol. This will force the remote system to be authenticated using PAP during the PPP negotiations. The valid username and password are defined by the fields of PPP Username and PPP Password.

3.6.2.13 Secure Poll

Secure poll allows the FastVu to support a high-level security feature available in particular Modems and Terminal Adaptors. This feature establishes an off-line 'heartbeat' link between the modem (or TA) and the Transmitter. The link is initiated and held active by the FastVu sending (polling) a pre-defined message at a regular time interval.

The modem or TA monitors the status of the link and if the link is broken for any reason, the exchange equipment is notified via an unsolicited error message. The client can then be informed so that corrective action can be initiated.

Poll Interval
Options: 0 (= off) and 1 to 99 seconds.

The poll interval is used to specify the time (in seconds) between (repeated) sendings of the ***Poll String*** to the modem or TA equipment. The default value = 0.

Poll String
Options: Maximum 40 characters

The poll string command that is required by the modem or TA is entered via the on screen keyboard. The default value = blank.

3.6.3 Advanced Setup - Base Port Number

Options: <value> Range is 3000 to 30000

Defines the Base Port Number used for communications when connected to another third-party (non-FastVu) device.

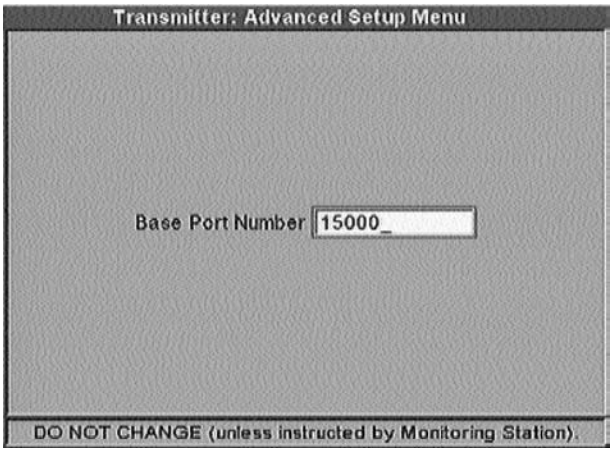


Figure 3-14 - Base Port menu

The default value = 15000 and should be left at this value unless a conflict occurs due to network connection of other third-party equipment.

WARNINGS

If the Base Port Number is changed, then all communicating systems must be changed to the same value. Failure to do this on all communicating systems **will** result in communications failure.

3.7 Call List

The ***Call List*** option menu is used to establish both the method and details of the connection path to various FastVu Receiver sites when an alarm is triggered. Selecting the ***Call List*** option displays the entry menu shown in Figure 3-15.

Figure 3-15 - Call List Menu

3.7.1 All Alarms

Options: Active, Inactive

The ***All Alarms*** option is a general control over the FastVu Transmitter's ability to automatically send either Alarm or Live Events status and images (pre-alarm and post-alarm) to any FastVu Receiver.

When set to **Active** and on detection of an alarm input, the FastVu Transmitter will store alarm images and attempt to connect to the FastVu Receivers defined in its Call List (depending on the individual alarm input configuration).

When **Inactive**, no attempt at connection will be made and no images will be captured ***except for No Video alarms***.

3.7.2 Outgoing Communications

Options: Ethernet, Serial Comms

The type of communications path used to connect to a FastVu Receiver can be set using this option.

- ***Ethernet*** - The Transmitter will use the addresses defined in the ***Ethernet Call List*** when attempting to connect.
- ***Serial Comms*** - The Transmitter will use the numbers defined in the ***Serial Comms Call List*** when attempting to connect to FastVu Receivers

3.7.3 Fallback Communications

Options: None, Ethernet, Serial

Selects the type of communications path to be used if connection fails to all of the numbers (or addresses) in the Outgoing Call List.

The addresses (or numbers) for either Ethernet or Serial fallback are entered via the appropriate Call List.

3.7.4 Ethernet Call List

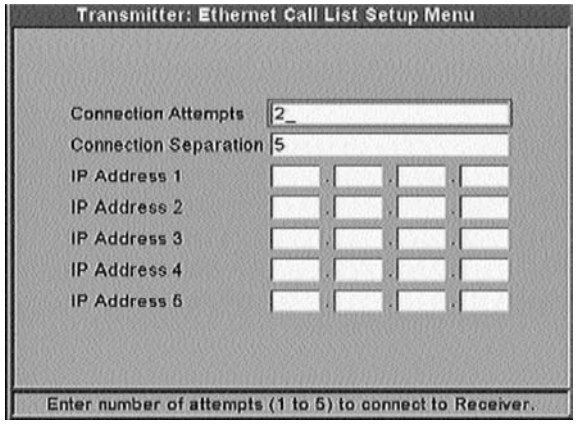


Figure 3-16 - Ethernet Call List Menu

3.7.4.1 Connection Attempts

Options: <number of attempts> Range 1 to 5

Connection Attempts is defined as the number of times an IP Address in the Ethernet Call List is tried in order to establish a communication link, before the next address in the list is tried. It is programmable from 1 to 5.

3.7.4.2 Connection Separation

Options: <value in seconds> Range 0 to 99

Connection Separation is a time interval that the FastVu Transmitter waits between successive attempts to establish a communication link. Connection Separation time starts from the end of the last attempt. The time interval can be set in 1-second increments. It is important that the chosen value takes into account the time required to traverse the network and associated routers, gateways etc.

> **NOTE**
>
> When all addresses in the IP list have been tried twice (using the number specified by 'connection attempts') and no successful connection has been made to any of the five IP addresses, the Alarm Event is cleared.

3.7.5 Serial Comms Call List

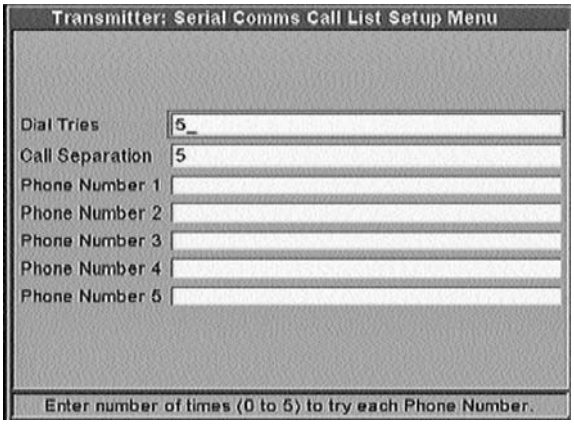


Figure 3-17 - Serial Comms Call List Menu

3.7.5.1 Dial Tries

Options: <number of attempts> 0, 1, 2, 3, 4, 5

Dial Tries is defined as the number of times a number in the Serial Comms Call List is dialled, in order to establish a communication link, before the next number in the list is dialled. It is programmable from 0 to 5.

3.7.5.2 Call Separation

Options: <value in seconds> Range 5 to 300

Connection Separation is a time interval that the FastVu Transmitter waits between successive attempts to establish a dial link. Connection Separation time starts from the end of the last attempt. The time interval can be set in 1-second increments. It is important that the chosen value takes into account the time required to dial the number (tone/pulse) and the number of Answer Rings programmed into the modem/TA at the other end.

> **NOTE**
>
> When all numbers in the call list have been tried twice (using the number specified by 'dial tries') and no successful connection has been made to any of the five numbers, the **Alarm Event** is cleared.

3.8 Video Setup

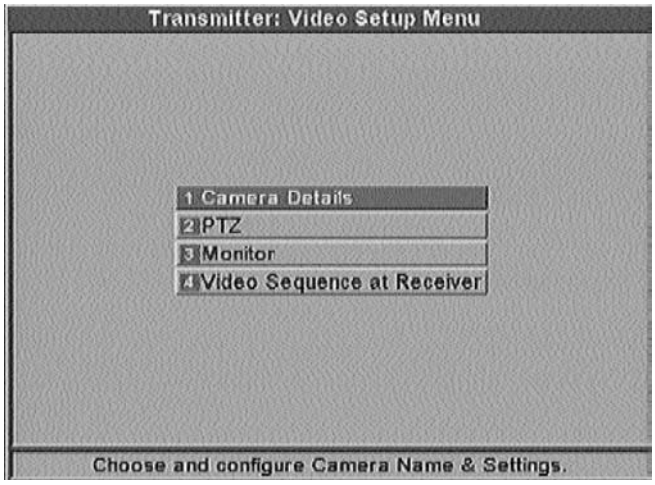


Figure 3-18 - Video setup menu

3.8.1 Camera Details

Selecting the ***Camera Details*** option displays the Camera List shown below. The list is used to select the camera to be viewed or modified.

Figure 3-19 - Camera List

Once a camera has been selected, the Camera Details menu is displayed. The menu is used to define the behaviour of each individual camera connected to the FastVu Transmitter.

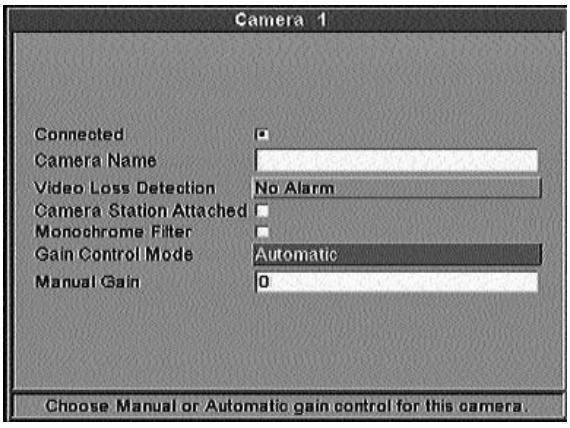


Figure 3-20 - Camera #1 Details Setup Menu

3.8.1.1 Connected

Options: Display, Ignore

The checkbox defines whether **this** camera is to be enabled for display on the Transmitter. When enabled (checked), other details about **this** camera can be modified.

To enable the use of a Camera, select the ***Connected*** checkbox and press ***Enter***.

3.8.1.2 Camera Name

Options: <camera name>

Enter the name to be associated with this camera. A maximum of 20 characters can be used. The name should be entered using the 'keyboard' entry screen that appears when the ***Camera Name*** option is selected.

3.8.1.3 Video Loss Detection

Options: Disabled, Enabled

When the Video Loss Detection option is set to Enabled, a **no-video** alarm will be raised for this camera if video sych is lost.

The No Video Alarm procedure is identical to storing an alarm sequence, except that the message, **No Video Alarm**, is displayed on the Receiver's monitor.

3.8.1.4 Camera Station Attached

Options: Yes, No

This option alerts FastVu to the availability of a camera station being attached to one of the cameras. PTZ control signals for an attached camera station will be directed through the FastVu PTZ Port for the camera station. To enable the use of a ***Camera Station,*** select the checkbox and press ***Enter***.

3.8.1.5 Monochrome (Black & White) Filter

Options: Yes, No

This option alerts FastVu that this particular camera is monochrome only (black & white) and allows the FastVu processing hardware to 'sharpen' the image by bypassing some of the colour filter processing it would otherwise perform on the signal.

To enable the use of the ***Monochrome Filter*** option, select the checkbox and press ***Enter***.

3.8.1.6 Gain Control Mode

Options: Automatic, Manual

The gain of the selected camera can be controlled manually or set for automatic operation.

Manual Gain may be required when using cameras attached to camera stations. Choose the option required. If Manual operation is selected, then the actual gain setting can be entered.

Explanatory Note

When both the FastVu and the camera station are powered up simultaneously (for example, via the same power circuit), the camera station may take longer than the FastVu to complete its power up diagnostics and initialisation tests. Under these conditions the FastVu will not register the video input from the camera station and mark the channel as **no video**. When video is subsequently available at the completion of the camera station power-up, the displayed video may not be satisfactory. Using the manual gain option on these particular video channels can overcome this problem.

3.8.1.7 Manual Gain

Options: <value> Range 0 to 200

Set the manual gain level required by the selected camera.

3.8.2 PTZ Operation Setup

The PTZ option selects the supported brands of PTZ telemetry station available for connection to cameras attached to the FastVu Transmitter. Use the arrow or Page keys to view further models.

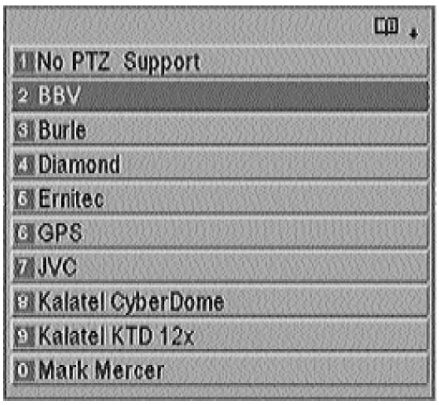


Figure 3-21 - Camera Station Types Available

Choose the ***No PTZ Support*** option if **no** remote PTZ equipment is installed.

3.8.3 Monitor Setup

The ***Monitor Setup*** menu configures the User's preferred display settings on the FastVu monitor.

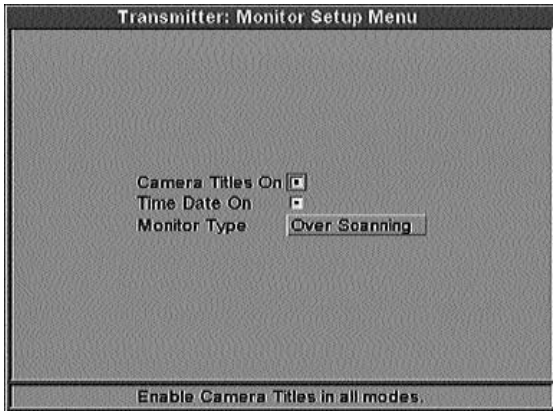


Figure 3-22 - Monitor Setup Menu

3.8.3.1 Camera Titles On

To enable the display of Camera Titles, select the ***Camera Titles On*** checkbox and press ***Enter***.

3.8.3.2 Time Date On

To enable the display of Time and Date information, select the ***Time Date On*** checkbox and press ***Enter***.

3.8.3.3 Monitor Type

Options: Under Scanning, Over Scanning

The ***Monitor Type*** allows the correct monitor scanning feature to be selected.

Over scanning monitors tend to have the edges of the picture display outside the visible area of the screen. Underscanning monitors will display all picture edges within the visible area of the screen.

3.9 Video Sequence at Receiver Setup

Selecting the ***Video Sequence at Receiver*** setup menu displays the menu shown below. The Video Sequence menu defines the sequence (order) that camera images are presented on the monitor attached to the Receiver.

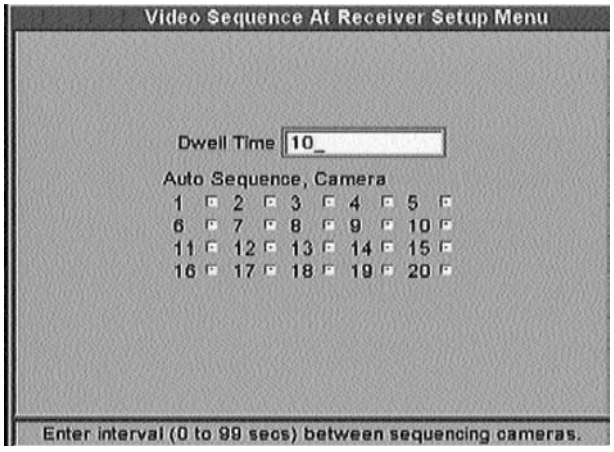

Video Sequence At Receiver Setup Menu
Dwell Time 10_
Auto Sequence, Camera
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
Enter interval (0 to 99 secs) between sequencing cameras.

Figure 3-23 - Video Sequence Setup menu

3.9.1 Dwell Time

Options: <duration in seconds> Range 1 to 99

Dwell Time is used to control the timing (between cameras) at the Transmitter and takes effect when a Guard Tour is selected at the Receiver.

The Dwell Time is common to all active channels and is defined as the duration a channel (camera) is displayed before switching to the next active channel. It can be set from 1 to 99 seconds. If the dwell time expires, the FastVu will continue to transmit the channel until the image has been updated before switching to the next active channel.

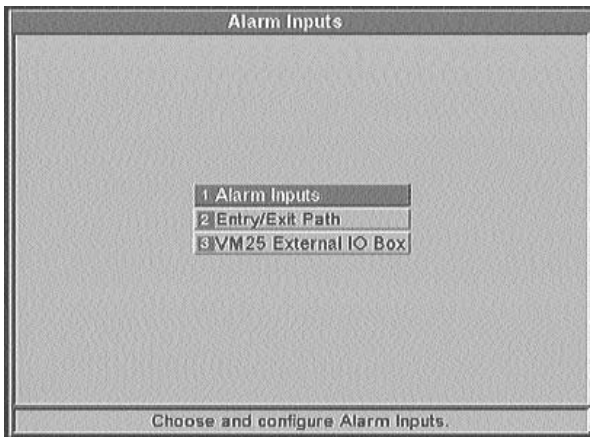
3.9.2 Auto Sequence, Camera

Options: Display, Skip

For each (enabled) camera, press the ***Enter*** key to enable (or disable) the checkbox. This enables (or disables) a camera for appearing in the auto sequence list.

3.10 Alarm

The Alarm menu provide setup details for Alarm Inputs, Entry/Exit paths and the optional ADPRO VM25 FastVu I/O Expander.



3.10.1 Alarm Inputs

The ***Alarm Inputs*** option provides the ability to define a number of parameters about the type and operation of the alarm inputs connected to the FastVu Transmitter.

There are twenty alarm inputs (10 for a FastVu 2010 or 3010) and to view or modify details about a particular input, first select the Alarm Input number from the displayed list.

Figure 3-24 - Alarm Inputs List

The Alarm Inputs Detail menu will be displayed as shown in Figure 3-25.

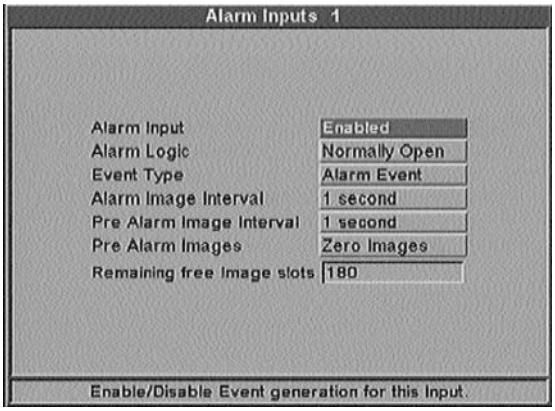


Figure 3-25 - Alarm Inputs Setup Menu

3.10.1.1 Alarm Input

Options: Disabled, Enabled

When programmed to **Disabled**, the Transmitter will ignore all activity on this Alarm Input.

When the ***Alarm Input Enabled*** option is programmed as **Enabled,** the FastVu Transmitter stores three images, separated by a programmable period, each time an alarm is triggered at the Transmitter's Alarm Input. If required, the Transmitter then establishes a communication link with the Receiver. Each of the three images are transmitted and displayed on the Receiver's monitor in quad screen. This allows the User to clearly identify the event(s) that caused the alarm and the subsequent events after the alarm.

The fourth quadrant is used to continually display images from the camera scene in alarm so that the User can view any other events that are occurring in that scene. Each Transmitter can store up to six concurrent alarms consisting of three images each.

3.10.1.2 Alarm Logic

Options: No EOL - Normally Closed, No EOL - Normally Open

The FastVu Transmitter can be programmed to trigger an alarm and store video images from a channel when it detects:

- normally closed contacts opening on alarm, or
- normally open contacts closing on alarm

ADPRO VM25 FastVu I/O Expander

When an optional ADPRO VM25 FastVu I/O Expander unit is connected to the Transmitter (and enabled for operation), a number of additional configurations are available. These optional wiring schemes provide the FastVu with tamper detection and reporting capabilities.

Alarm Inputs can be configured using the following termination methods (BS8418 Compliant):

1) No End of Line (EOL) Normally Closed (NC),
2) No EOL Normally Open (NO),
3) Single EOL NC,
4) Single EOL NO,
5) Dual EOL NC,
6) Dual EOL NO.

Terminations are achieved by configuring (at most) two resistors per alarm sensor.

3.10.1.3 Event Type

Options: Alarm Event, Live Event

Event Type defines the way the Receiver will respond to an alarm input

3.10.1.3.1 Alarm Event

When set to the ***Alarm Event*** option, the Transmitter, on detection of an alarm input transition, will grab three video images from the associated alarm camera and connect to the Receiver. The Receiver monitor will display a quad screen image of the three post-alarm images. The fourth quadrant will display live images from the alarm camera.

3.10.1.3.2 Live Event

When set to the ***Live Event*** option, the Transmitter, on detection of an alarm input transition, will connect to the Receiver. It will not grab any post alarm video images from the associated alarm camera.

At the Receiver, the monitor will display the images from the alarm camera in full screen mode.

This option is used in situations where only 'notification' is required,. For example, an alarm camera may monitor a entry door or gate. When an alarm is activated (by say, a doorbell switch or infra-red detector), the Receiver will switch immediately to that camera so that identification can take place.

3.10.1.4 Alarm Image Interval

Options: 0.5, 1, 1.5, 2, 2.5, 3, 6, 9 seconds.

This time value (in seconds) is used to set the interval between the three images grabbed when an alarm input transition is detected by FastVu.

The choice of time interval will depend on the content of the alarm image scene and the anticipated speed of movement of any subjects within the scene.

3.10.1.5 Pre-Alarm Image Interval

Options: 0.5, 1, 1.5, 2, 2.5, 3, 6, 9 seconds.

This option sets the time interval, in seconds, between image captures. The valid range is from 0.5 to 9 seconds with a default period of one second.

When storing the maximum number of images, this interval represents from 1.5 to 27 minutes of pre-alarm capturing.

3.10.1.6 Pre-Alarm Images

Options: Zero, 9, 18, 36, 45, 60, 90, 180 images

This option defines the number of pre-alarm images that are to be stored in memory for THIS alarm input (channel) number. Setting the value to zero effectively disables pre-alarm capture for **this** particular alarm input.

3.10.1.7 Remaining Free Image Slots

This is an information field providing the number of available memory slots available for pre-alarm image capture. There is a total of 180 memory slots available.

The number displayed as the 'Remaining Free Images Slots' is the complement of the ***Pre-Alarm Image Acquisition*** value, which defines the sum of all the currently allocated memory slots.

3.10.2 Entry/Exit Path

By specifying an Alarm Input as an Entry Point and other Alarm Inputs as an Entry/Exit Path Zones, users can define the route used to enter or exit an area protected by the FastVu Transmitter.

Entry Path - Normal entry will cause an alarm from the sensor at the Entry Point. Alarms originating from the Entry Point and Entry Path Zones are held as pending and then discarded if the system is placed into Access mode before the Entry/Exit Path Delay expires. If the Entry/Exit Path Delay expires before the system is placed into Access mode, then any Alarm Input will be processed immediately. Note that any other alarm that is not in the Entry Path Zones list, will be processed immediately.

Exit Path - When the FastVu is 'sealed' (ie. set into the Secure mode), alarms from sensors in the Entry Path Zones will occur as the route is used. These alarms are ignored until the end of the Entry/Exit Path Delay period. However, any other Alarm that is not in the Entry Path Zones list, will be processed immediately.

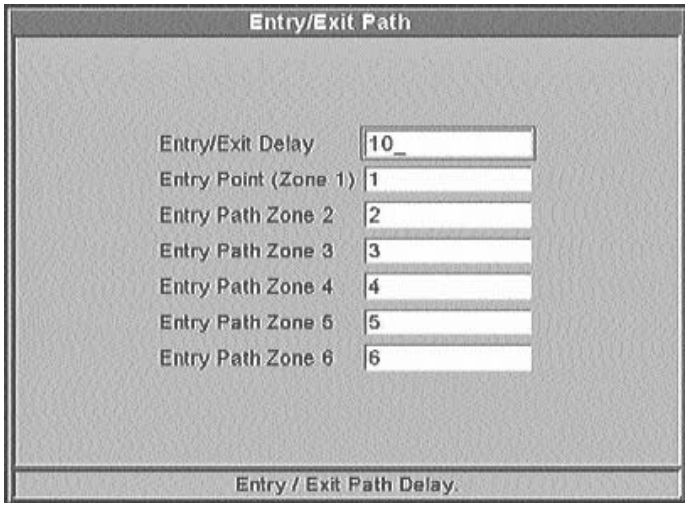


Figure 3-26 - Entry/Exit Path menu

3.10.2.1 Entry/Exit Delay

Options: 0 to 120 seconds

The Entry/Exit Delay defines the period of time that is available for a User to enter a Secure area and Disarm (turn off) the system. Entry/Exit Delay is initiated by an Alarm Input that has been designated an Entry Point.

When FastVu is in the Secure mode, alarms from an Entry Point and Entry Path Zones will be recorded locally and appropriate alarm images captured. If Access mode is not selected by the time the Entry/Exit Delay expires, these alarms will be processed.

When a FastVu is placed into Secure mode (via the Access/Secure input), alarms from the Entry Path Zones are ignored until the Entry/Exit Delay expires. All Alarm Inputs will then be processed normally. Any Alarm Input not in the Entry Path Zones list, will be processed immediately

3.10.2.2 Entry Point

Options: Alarm Input number

Specifying an Alarm Input as an Entry Point means that an alarm on this zone will start the Entry/Exit Path Delay timer. The alarm, along with any captured video images, is held as 'pending' and is discarded if the system is Disarmed before the end of Entry/Exit Delay.

If the system is not Disarmed before the end of the Entry/Exit Path Delay, the alarm (along with any others generated along the Entry Path Zones) will be reported as usual.

IMPORTANT NOTE

An Entry Point **must** be specified to activate the Entry/Exit Delay timer.

3.10.2.3 Entry Path Zone (2 to 6)

Options: Alarm Input number

To create a controlled route between an Entry Point and the location where the FastVu can be Disarmed, an list of Entry Path Zones must be entered. An Entry Point must be specified first.

In addition to the Entry Point, up to five zones can be designated on the path for a total of six (6) zones.

Choose the Alarm Input number to be assigned to the Entry Path Zone (2..6).

3.10.3 VM25 External I/O Box

The ADPRO VM25 FastVu I/O Expander (ADPRO Part Number 201285) provides 10 relay contact sets for use with a FastVu Transmitter. The changeover contacts are used to switch external circuits and equipment.

3.10.3.1 VM25 External I/O Box Enable

Options: Disable, Enable

Use the **VM25 External I/O Box Enable** checkbox to allow operation of the VM25.

3.11 Audio Setup

Selecting **Audio** from the main Setup Menu displays the menu shown in Figure 3-27. The Audio menu configures the FastVu audio channel features.

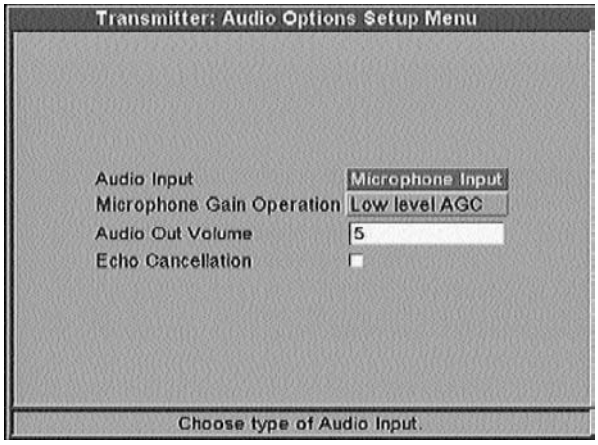


Figure 3-27 - Audio Setup menu

FastVu supports combined video and audio operation over communication links with a minimum data throughput of 14.4 kbps. This provides simultaneous video and audio operation, with an audio bandwidth of 300-3KHz, over standard public switched telephone networks (PSTN) as well as high speed digital networks.

Although FastVu always passes audio at the maximum possible bandwidth, the overall audio quality will ultimately depend on the quality of the microphones and speakers connected to the FastVu and the level of background noise in the environment. Tests should always be performed with the desired audio equipment to obtain an understanding of the audio performance.

3.11.1 Audio Input

Options: Microphone Input, Line Input, Switcher

Select the type of audio input device connected to the FastVu unit.

3.11.2 Microphone Gain Operation

Options: Low Level AGC, High Level AGC, Manual Gain

Select the type of Automatic Gain Control (AGC) used by FastVu to maintain a constant audio input range.

Low Level AGC is typically used in a more controlled noise environment, such as a Control Room or office, where only a small amount of background noise is present. High Level AGC would be used where high levels of background noise can be expected. Microphone locations such as car parks and street environs would probably use this option.

Manual gain should be used when the PTT 'Intercom' option is selected as it provides better control over audio where echo cancellation cannot be used.

3.11.3 Audio Out Volume

Options: <volume level> Range 0 to 9

Choose a volume level between 0 (lowest) and 9 (highest) to suit the operational environment.

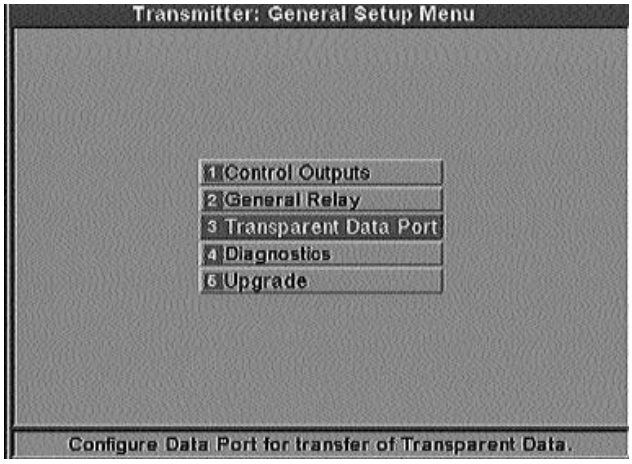
3.11.4 Echo Cancellation

Options: On, Off

This feature is used to diminish audio echoes when two-way conversations are taking place, especially when using a 'speaker-phone', where the microphone and speaker are in close proximity to each other. Echo cancellation is performed by special software in the FastVu unit.

To enable the Echo Cancellation feature, select the ***Echo Cancellation*** checkbox and press ***Enter***.

3.12 General Setup



3.12.1 Control Outputs

There are three Control Outputs available on a FastVu Transmitter (ten with a VM25 FastVu I/O Expander). The outputs are used to generate a control signal for use by the inputs of third-party equipment at the remote site, for example a boom gate controller or a floodlight control device.

To access the Control Outputs Setup menu, first select the number of the Output required <1, 2 or 3>.

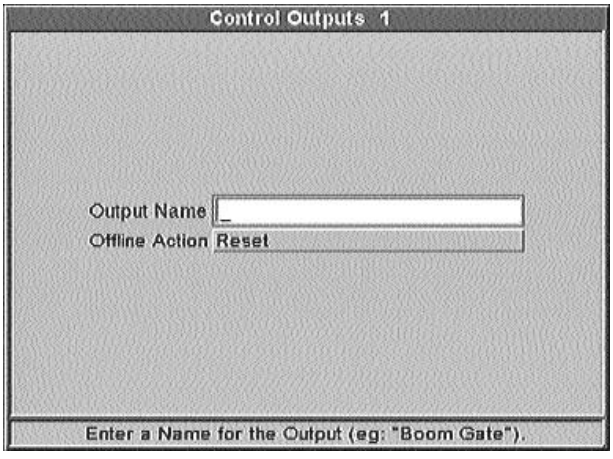


Figure 3-28 - Control Output Setup Menu (Output #1 shown)

3.12.1.1 Output Name

Options: <name>

Enter the 20 character name to associate with this output.

3.12.1.2 Offline Action

Options: Reset, Latch

Define the action of the Control Output circuit after the ***Ctrl*** keys

are pressed.

- ***Reset*:** After activation, the Control Output returns to its **Normally Off** state when the remote system is disconnected.
- ***Latch*:** The Control Output changes state and stays in that state until the ***Ctrl*** key is pressed again, even if the remote system is disconnected.

3.12.2 General Relay

Options: Alarm, Connection

The General Relay can be set to become active when either an alarm is active or the FastVu is online. The General Relay has a default to the ALARM option. When activated, the contacts of the General Relay will changeover.

Figure 3-29 - General Relay menu

3.12.3 Transparent Data Port Setup

FastVu allows the operation of 3rd-party RS-232 based equipment via the Transparent Data Port.

For example, a 3rd-party video matrix switcher needs to be controlled via its own proprietary RS-232 keyboard. Using the Transparent Data Port, the keyboard is connected to the FastVu Receiver at a central site while the matrix switcher is connected to the Transparent Data Port at the remote Transmitter. When the remote site is accessed via the FastVu link connection, data from the keyboard is passed transparently to the matrix switcher for direct control of the unit.

The Transparent Data Port setup menu is used to configure the parameters required for the RS-232 link.

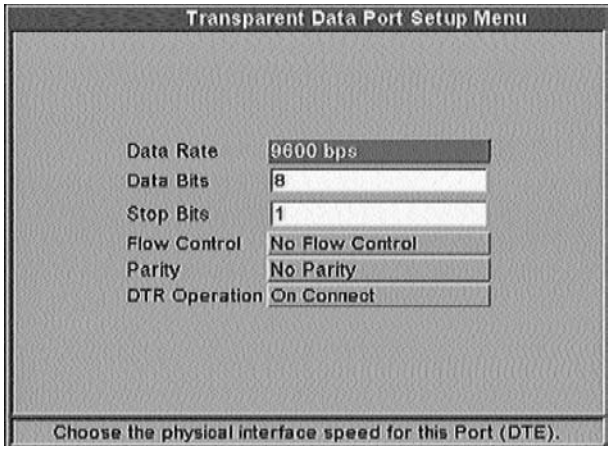


Figure 3-30 - Transparent Data Port Setup Menu

3.12.3.1 Data Rate

Options: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600bps

The Data Rate determines the local data transfer rate between the RS232 interface and the connected equipment.

3.12.3.2 Data Bits

Options: 7, 8

Sets the number of Data Bits used to transfer data locally between the RS232 interface and the connected equipment. It can be set to either 7 or 8 data bits.

3.12.3.3 Stop Bits

Options: 1, 2

Sets the number of Stop Bits used when transferring data locally between the RS232 interface and the connected equipment. It can be set to either 1 or 2 stop bits.

3.12.3.4 Flow Control

Options: No Flow Control, Hardware Flow Control

Sets the Flow Control used to transfer data locally between the RS232 interface and the connected equipment. Hardware handshaking (CTS, RTS) can be selected to be on or off.

When using the RS232 interface as a bi-directional link, setting the ***No Flow Control*** option enables Ctrl S/Ctrl Q characters generated by the external equipment to be sent across the communication link for direct software handshaking between the equipment.

3.12.3.5 Parity

Options: No Parity, Odd Parity, Even Parity

Sets the Parity used when transferring data locally between the RS232 interface and the connected equipment.

3.12.3.6 DTR Operation

Options: Always, On Connect

This option allows the User to control the operation of the Data Terminal Ready (DTR) signal of the RS-232 line to best suit the intended operation of the 3rd-party equipment.

When set to **Always**, the DTR signal will be permanently asserted by the FastVu Transparent Data Port. The ***On Connect*** option only asserts the DTR signal after connection between the FastVu Transmitter and Receiver is established.

3.12.4 Diagnostics

This option is for FACTORY use. **Do not** use or select this option unless directed to do so by ADPRO Technical Support personnel.

3.12.5 Upgrade

Options: Save Settings before Entering Upgrade Mode, Enter Upgrade without Saving

The software used by FastVu can be upgraded by transferring a new program from a PC using either Port 1 or the Network Port on the rear of the FastVu unit. Details of the upgrade procedure are given in the 'FastVu Software Upgrade Booklet' that accompanies the upgrade CD-ROM program.

NOTE

The CONFIGURATION Dipswitch #10 must be set to the ON position when upgrading via Port 1.

Before entering the software Upgrade process, the User is given the option of saving current setup information as shown in Figure 3-31.

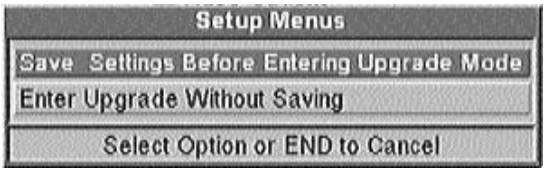


Figure 3-31 - Upgrade Setup Menu

- ***Save Settings Before Entering Upgrade Mode*** - the current setup configuration is saved as a backup
- ***Enter Upgrade Without Saving*** - no setup information is saved

When a selection has been made, the status message shown in Figure 3-32 is displayed.

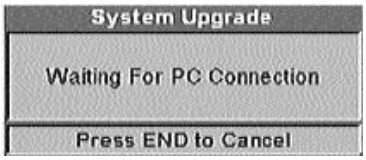


Figure 3-32 - PC Connection Message

On completion of the software upgrade, the FastVu unit must be powered down / up for the new program to take effect.

4.0 Operation

This section describes the operation of the FastVu Digital Video and Audio Transmission System and gives guidance for operating the FastVu **after** it has been installed and setup. The aim is for Users to understand the principles and procedures needed to **operate** FastVu on a daily basis. Those needing information about installing or setting-up FastVu are referred to the relevant **Installation** and **Setup** sections of this manual.

4.1 Glossary of Terms

Access State	A state of operation without triggering an alarm condition.
Alarm	Receipt of a 'trigger' signal from an external detector whilst the FastVu is in Secure mode. Loss of video signal from a camera is also treated as an alarm and is reported in both Access and Secure modes.
Alarm Camera	A camera connected to a FastVu that has associated with it a set of external detector contacts. When these contacts are triggered the camera becomes an 'alarm camera' until it is reset.
Auto Sequence	The ability for automatic sequential display of a selection of cameras on the monitor.
Camera Station	A device for controlling Pan/Tilt/Zoom ability on remotely located cameras.
Comms	Abbreviation for a serial or network data communication link.
Current Camera	One of twenty connected cameras that has been either manually or automatically selected to be the primary camera to display. Keyboard or (non-global) system actions are effective on the current camera only.
Cursor keys	The four arrow keys on the keyboard.
Down-the-Coax	The ability to send control signals (to a telemetry station) down the same coaxial cable that is used to transmit video to the FastVu.
EOL	In reference to alarm input wiring, EOL is the 'End of Line'.
Event	Receipt of a 'trigger' signal from an external detector whilst the FastVu is in Access Mode.
Image	A video picture digitised to the selected resolution.
PTZ	The ability provided on a camera to allow it to be remotely controlled for azimuth (**P**an) and elevation (**T**ilt) movement to view different sectors around its location. Mechanical control of the camera lens provides **Z**oom in and out. A telemetry station is needed to provide these mechanical controls for a camera.
Parameter	A value or state that is used to set up the operation of a FastVu system.
Secure Mode	A state of operation that allows the system to automatically generate alarm responses. The operator must acknowledge every alarm in Secure Mode.
Telemetry Station	A device used to provide remote, mechanical control of a camera. Refer camera station.

Trigger — A change on the alarm inputs from external detector or sensor 'contacts' causing a 'close to open' or 'open to close' transition (or a logic low to high or logic high to low transition).

4.2 Typical Configuration

Figure 4-1 shows a typical FastVu configuration.

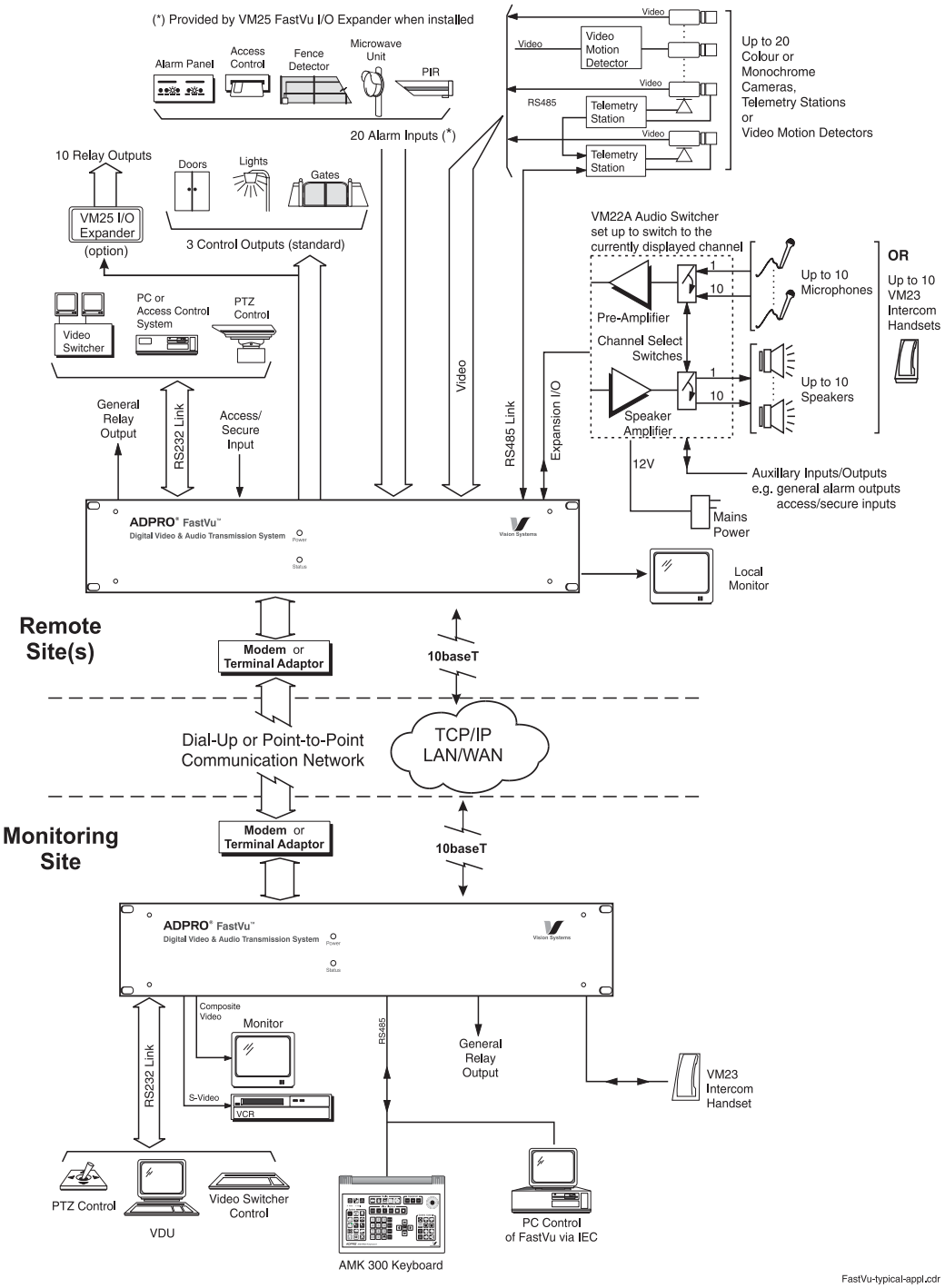


Figure 4-1 - Typical FastVu configuration

Alarm Inputs shown in Figure 4-1 can be configured for each camera with one detector or sensor per camera. FastVu systems can be operated as soon as the units have been powered up and successfully passed the internal startup diagnostic tests. There are two LED indicators on the front panel.

- ***Power*** - Green light indicates that 12V DC has been applied to the unit.
- ***Status*** - Red light will extinguish after successful completion of the startup diagnostic checks.

To provide the facility to independently monitor the status of the FastVu unit, a **high/low** contact pin is provided on the Audio Switch connector (pin #8) on the rear panel (designated the **alive** signal). Refer to Section 1, Audio Switch Connection, of this manual for more information.

If neither of these indicators is illuminated, refer to the Troubleshooting Section for possible causes.

4.3 Startup Monitor Display

When FastVu has completed the power up diagnostics, information will be available for display on the monitor output.

4.3.1 Receiver

The normal startup condition for the Receiver, when no communication link is established, is for the **Offline** to appear at the bottom of the monitor screen, indicating that the Receiver is idle.

4.3.2 Transmitter

The normal startup condition for the Transmitter is for the monitor to auto sequence through and display all **enabled** channels at one second intervals. If video is not detected on a particular channel, a No Video Alarm (if enabled) is triggered and will remain active until cleared by the Receiver.

4.4 Establishing a Communication Link

For a FastVu system's Transmitter to pass video and audio information to a Receiver, a communications link (or path) first must be established. There is a variety of telecommunications link types that may be used for this purpose:

- ***Network link*** - Use an Ethernet based Local Area Network (LAN) or Wide Area Network WAN)
- ***Digital link*** - Either a point-to-point link (leased line) or a dial-up connection can be used with ISDN
- ***Analogue link*** - Traditional telephone lines, either leased line or a dial-up, using the PSTN.

When connected to a leased line (either ISDN or PSTN), a communication link is dedicated between the Transmitter and the Receiver. There is no need to **dial** make a connection as the circuit between the two FastVu units is permanent.

When connected to a Local Area Network (LAN) or the dial-up network (either ISDN or PSTN), a link will need to be established by:

- the Receiver requesting a connection to the Transmitter to view activity at the site, OR
- the Transmitter requesting a connection to the Receiver when an alarm is triggered, OR
- a 'No Video' alarm being generated at the Transmitter.

4.4.1 Using the AMK-300 Keyboard to Establish a Connection

To connect to a remote Transmitter using an AMK-300 keyboard attached to the Receiver, the procedure outlined below should be followed.

a. When the ***Offline*** is displayed, press the ***Connect*** key to display the Site List. The first page of 10 sites (of a possible 100) are shown on the screen.

b. Any one of 100 sites can be chosen. The **Up/Down** arrow keys move the cursor up or down the list, through all 100 sites. Alternatively, pressing the ***Page*** key moves through multiples of ten sites, a page at a time.

Use SHIFT PAGE to move backwards through the Site List pages.

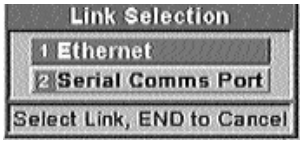
c. Once the correct page is found, move the cursor to the required site using the **Up/Down** arrow keys.

Press the ***Enter*** key to establish a connection to the site. The Receiver uses the address or number that has been programmed in the Site List menu.

Alternatively, while the ***Offline*** is displayed, the operator can select a numeric value between 1 and 99 (which represents the site to connect) followed by the ***Connect*** key. eg. to call 'Site 25' press the following keys '2' '5' .

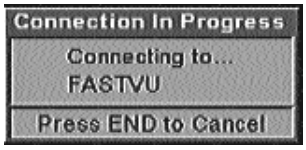
NOTE

If the site has been configured to use either an Ethernet port address OR a Serial Comms phone number, the following ***Link Selection*** is displayed.

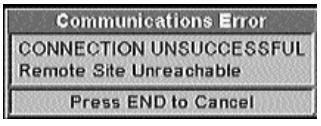


Select the appropriate link option using the ***Up/Down*** arrow keys and press ***Enter***. Alternatively use the Fast button number next to each option.

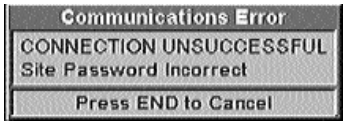
When the Transmitter answers and the Receiver password matches the Transmitter's, a communication link is established. A connection message followed by video from the Transmitter is displayed.



If the incorrect (or no) address or phone number are present, the following message appears on the screen.



If the Site Password does not match, an error message is displayed and the connection is terminated.



If the site is engaged or the connection request is unanswered, the Receiver will display ***No Answer*** by ***Offline*** when the programmed Dial Time has elapsed.

If a device other than a FastVu Transmitter answers the call, a ***Connection not Successful*** message appears on the screen and the link is terminated.

4.4.2 Using an External Control Device to Establish a Connection

To connect to a remote Transmitter using an **External Control Device** wired to the Receiver's keyboard port, the procedure outlined below should be followed. An External Control Device can be any device such as a PC or a third-party controller that communicates via the ADPRO IEC instruction set.

Refer to the Inter Equipment Communications (IEC) User Manual (Part Number 300081) for instruction details. Refer to Section 1.12 for wiring details.

When establishing a connection via an External Control Device, the following details must be supplied:

- Site Name
- Site Password
- User
- Site Address

The Receiver can be polled to determine the connection status. Connection Failure messages can also be obtained in this way.

4.5 Terminating a Communication Link

4.5.1 Using the AMK-300 Keyboard

Pressing the ***End*** key while the Receiver is establishing a link will terminate the connection immediately. After a link is established, the ***Connect*** key is used to terminate a communication link. The following ***Disconnect Requested*** message is displayed:

Press the ***Enter*** key to complete the link disconnection or press the ***Connect*** key a second time.

NOTE

If outstanding alarms are still in the Active Alarm List, then disconnection will not occur and an error message will be displayed.

4.5.2 Using an External Control Device

To disconnect an existing connection, the IEC "Disconnect" command must be sent from the External Control Device.

The FastVu can be polled via the IEC port to determine if the disconnection was successful.

4.6 Receiver On-Line Display

Figure 4-2 shows the typical information presented on the Receiver's monitor after a communication link with a Transmitter has been established.

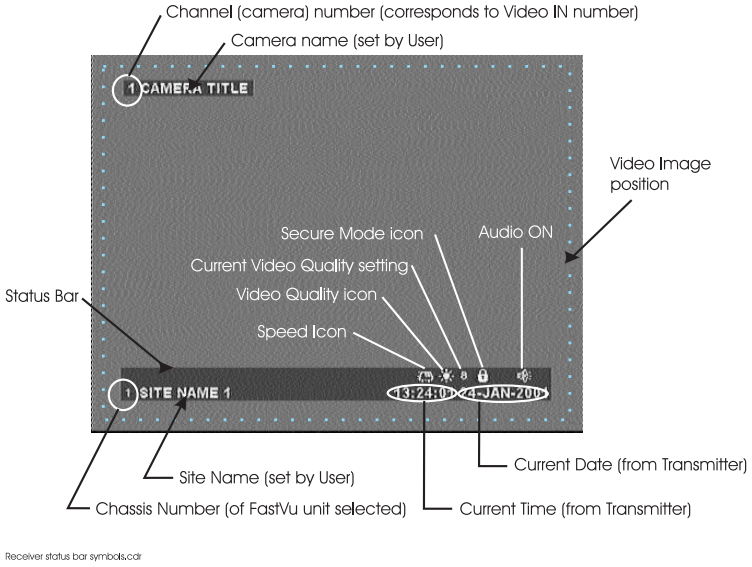


Figure 4-2 - Receiver's On-Line display (no video shown for clarity)

The information contained on the Receiver's display may include:

Camera Number — Each of the cameras connected to the Transmitter are identified with a camera number. This number is assigned by FastVu and is **not** user configurable.

Camera Name — A programmable camera identification of up to 20 characters. Each camera may be assigned a unique name so that a user can easily identify the area being viewed.

Chassis Number — The number assigned to a FastVu chassis in a multi-chassis configuration. This number is assigned via the FastVu 'Chassis Select' switch on the rear panel.

Site Name — A 20 character (max) Site Name to identify the location of the Transmitter. User configurable.

Time / Date — The time/date of the Transmitter when viewing live video or the time/date when the image was stored for alarm images.

Speed — ***Not available in current version.***

Video Quality — The video quality icon is displayed when the Video Quality key is used.

Audio — An speaker symbol is used when **listening** to activity at the remote site. The microphone symbol (to represent 'talk') is used to indicate the PTT microphone switch is active.

Mode — Displays the **open lock** or **closed lock** (secure) icon depending on the current mode.

4.7 Transmitter Display

The Transmitter automatically sequences through and displays the programmed Display Channels at one second intervals. If video is not detected on a particular channel, a **No Video** (if enabled) is triggered.

When the FastVu system is in operation, the basic system conditions and responses are described in Table 4-1.

CONDITION	TRANSMITTER	RECEIVER
No Alarms - No Communications Link	Monitor displays the camera outputs in numerical sequence (full screen)	Monitor display is blank with OFFLINE message showing
No Alarms - Comms Link established by Receiver	Monitor displays the camera outputs in numerical sequence (full screen)	Displays live images from the requested (current) camera in full-screen mode or multiple cameras in multi-split view.
Alarm Triggered - No Communications Link	Captures 3 post-alarm images and starts Connection to the Receiver to establish a Comms link	Alarm icon displayed and the 3 post-alarm images are displayed along with live video. Full screen display of selected images can be made.

Table 4-1 - Typical System Conditions

4.8 Status Information

FastVu provides a number of Status information displays. The Receiver displays are used to review the current status of the following:

- Alarm Inputs
- Control Outputs
- Software Revision Level

4.8.1 Alarm Input Status

While the Transmitter is **Online**, pressing the ***Status*** key

displays the information screen shown in Figure 4-3:

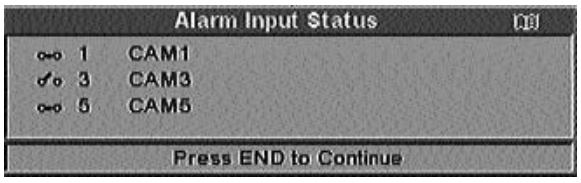


Figure 4-3 - Alarm Input Status display

Against each of the configured channel numbers, the **Camera Name** is displayed. Depending on the status of the Alarm Input contacts, the small icon to the left of the channel number indicates the current condition. For example, channel 1 (CAM1) is 'Sealed' and channel 3 (CAM3) is 'Unsealed' when an alarm condition is present, a **Bell** icon is shown.

4.8.2 Control Output Status

While the Transmitter is ***Online***, pressing the

keys will display the information shown in Figure 4-4:

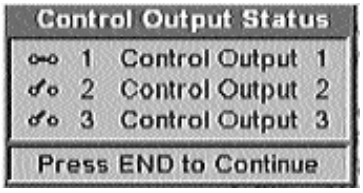


Figure 4-4 - Control Output Status display

The status of the three control outputs at the Transmitter is indicated with a **closed** or **open** switch icon. To change the condition of a control output:

- Press the number of the Control Output <1, 2 or 3> then the appropriate key

to change.

The Output Control Status screen can remain in view will control outputs are changed.

> **NOTE**
>
> When a VM25 FastVu I/O Expander is fitted, ten control outputs will be available.

4.8.3 Software Status

Pressing the HELP key will display the Version number of the FastVu software.

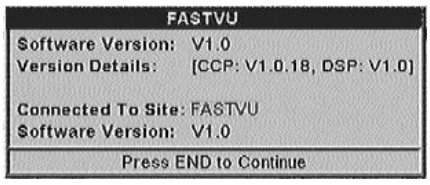


Figure 4-5 - Help key status message

Figure 4-5 shows the status message when the system is in the ONLINE state, with the Receiver version shown at the top of the message and the Transmitter version (at the connected Site) shown at the bottom.

If the system is ***Offline***, the Transmitter software revision details are not shown. However, if the Transmitter Setup is being access locally, pressing ***Help*** will display the software version on the local monitor.

4.9 Multi-Live Display Formats

Pressing the ***Multi-Live*** key allows the simultaneously display of more than one camera output on the monitor.

Live video from multiple cameras can be shown in a variety of screen split formats. The first press of the key sets the monitor to show a 4-way split with the current camera in screen quadrant #1. Pressing the key again will cycle the monitor display through all available formats. The formats are 4, 7, 10, 13 and 16-way.

4.10 Auto Sequence Operation

The Auto Sequence feature enables selected channels to be automatically displayed at a programmed rate on the Receiver's monitor when it is **Online** to a Transmitter.

Pressing the ***Auto Sequence*** key enables this feature. Each channel to be included in the auto sequence must be enabled via the Video Sequence menu at the Transmitter. Channels are displayed and presented on the monitor in a full screen format except when the Receiver has been set to operate in a 'multi-live' display format.

The first channel defined in the Video Sequence list is used as the 'reference' channel. If the Auto Sequence key is pressed while the FastVu is in one of the Multi-Live display modes then the displayed video channels will be refreshed to start with the reference channel first.

Auto Sequence operation is halted when the ***Auto Sequence*** key is pressed again or an Alarm is received when there were previously no alarms in the Alarm List.

4.11 Types of Alarm

FastVu supports two types of alarm video capture, post alarm and pre-alarm. Individual channels can be set to respond to either post alarm, pre-alarm or both. Alternatively the channel can be configured to ignore alarm inputs completely.

To use either or both types of alarm, the FastVu Transmitter must have the respective Alarm Input wired to a suitable detection device.

4.11.1 CMS User Priority

To facilitate operation with Central Monitoring Station (CMS) systems, FastVu provides the ability to define a special user category, a 'CMS User', to provide a priority connection to a remote Transmitter. Refer to Transmitter Setup and 'System Details' menu for information about setting the CMS User information.

When an alarm condition is generated at a Transmitter that is currently connected (on-line) to a Receiver, the Transmitter will check to see if the connection has been initiated by a 'CMS User'. If this is so, then event information is uploaded. If the connected user is **not** a CMS User (ie. an Observer), then the Transmitter will send a warning message to the Receiver ('Disconnecting: Events Pending for CMS') and then disconnect.

The Transmitter will then attempt to connect to the CMS User defined in its call list and upon successful connection, upload the new event information to that Receiver.

4.11.2 Post Alarms

Post alarms are defined as the capture of a short sequence of individual video images after the alarm input has received an external trigger.

Starting at the instant the alarm is triggered, the Transmitter stores three consecutive images, separated by a programmable period (referred to as an alarm sequence), from the channel associated with the alarm input. A FastVu Transmitter can store up to six alarm sequences from any of the alarm inputs.

When an alarm input is triggered the Transmitter will establish a communication link with the Receiver if it is not already **on-line** (provided the Transmitter's Call List Option of 'All Alarms' is set to 'Active'). When an alarm is received, the Receiver's keyboard beeper sounds (provided it has been programmed to do so).

Each of the three images for the first alarm sequence are automatically displayed on the Receiver's monitor in a quad screen format as shown in Figure 4-6. The first image stored is displayed in quadrant one and the last image in quadrant three. Quad format allows the user to clearly identify the event(s) that caused the alarm and the subsequent events after the alarm. Quadrant 4 is used to continually display live images from the channel in alarm so that the user can view any other events that are occurring.

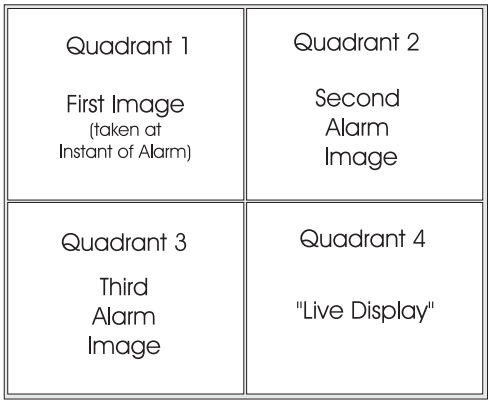


Figure 4-6 - Post-Alarm Sequence display

Subsequent alarms are not automatically displayed but are indicated on the monitor's status bar. The operator must manually select these channels. The Alarm Status Bar details are shown in Figure 4-7.

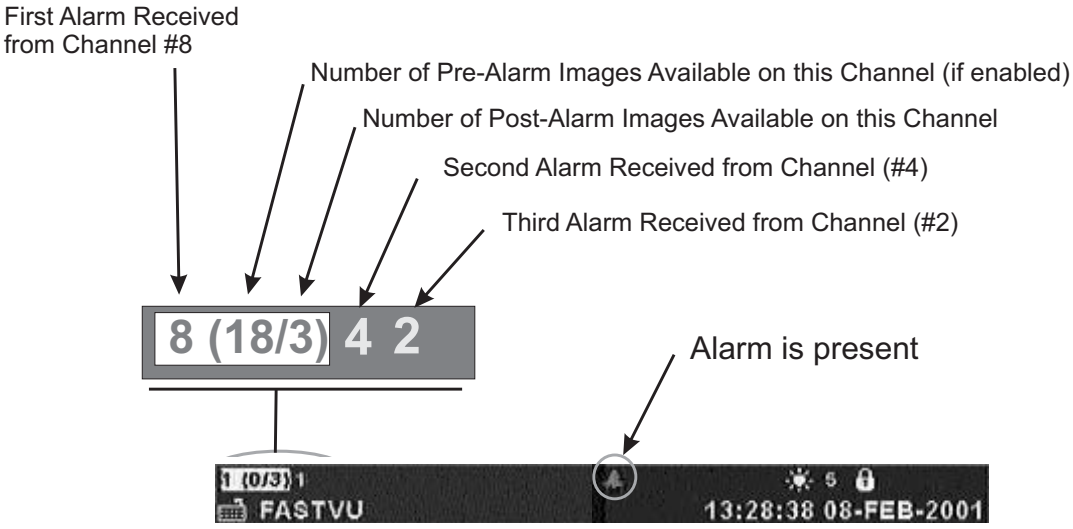

First Alarm Received
from Channel #8
Number of Pre-Alarm Images Available on this Channel (if enabled)
Number of Post-Alarm Images Available on this Channel
Second Alarm Received from Channel (#4)
Third Alarm Received from Channel (#2)
8 (18/3) 4 2
Alarm is present
1 (0/3) 1
FASTVU
5
13:28:38 08-FEB-2001

Figure 4-7 - Alarm Status Bar Details

4.11.3 Pre Alarms

Pre alarms are defined as the capture of a sequence of individual video images before the alarm input has received an external trigger.

Capture of pre-alarm images is only active when the Transmitter is in the offline state.

When a channel is configured for pre-alarm, the FastVu software continuously captures video images and keeps them in a memory store. Immediately an alarm is detected, FastVu stops capturing the video images from that channel, ensuring what remains in the memory store is a visual record of events leading up to the time of the alarm.

4.12 Viewing and Clearing Alarms

Initially, a channel with an *alarm sequence* displays the post alarm images in quad screen format. To review a post alarm or pre-alarm sequence(s), the ***Alarm Playback*** keys and the ***Alarm Action*** keys on the AMK-300 keyboard are used.

4.12.1 Alarm Playback keys

The ***Alarm Playback*** keys allow the detailed viewing of an alarm sequence.

When an alarm is active and displayed on the Alarm Status bar of the Receiver, pressing the ***Play*** (Forward or Reverse) or ***Fast Forward*** or ***Fast Reverse*** keys will place the Receiver into the Alarm Playback mode. Images can then be reviewed in full screen mode, while stepping forwards, backwards or pausing.

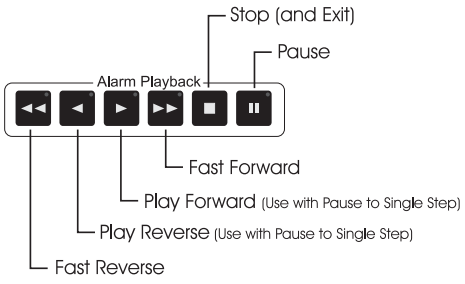


Figure 4-8 - Alarm Playback keys

To return to the normal display operation, press the ■ ***Stop/Exit*** key.

4.12.2 Post Alarm Status Bar

When post alarms are received and displayed on the monitor using the ***Alarm Playback*** keys, the ***Alarm Status*** *bar* provides details of the alarm image currently being displayed in full screen format on the monitor.

The Alarm Status bar shows post alarm images **relative** to the instant of the alarm trigger, ie. **after** the alarm event.

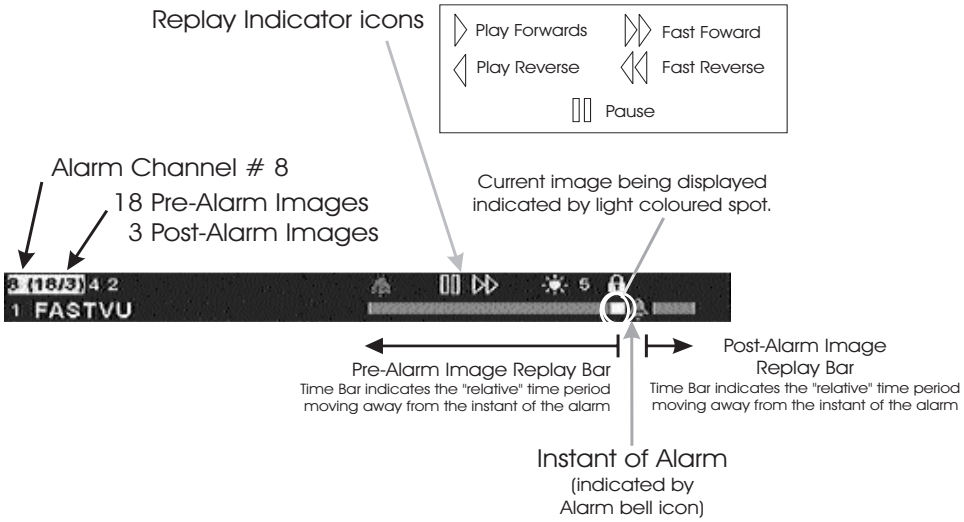
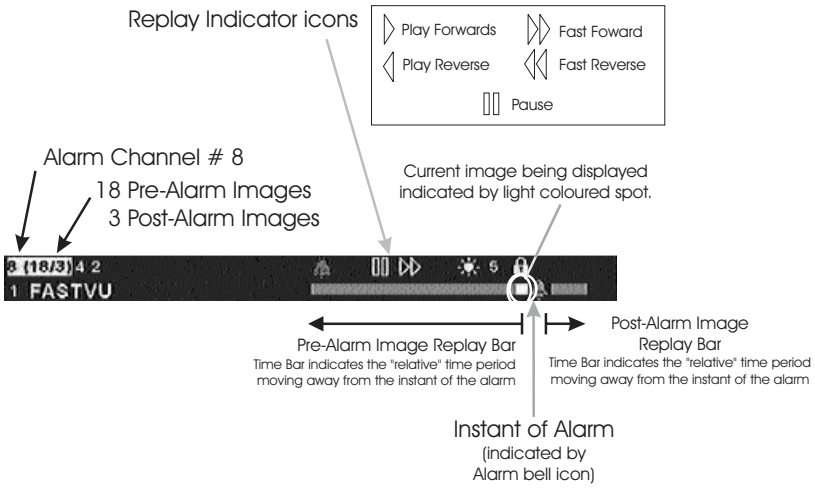


Figure 4-9 - Alarm Status Bar for Post Alarm Images

4.12.3 Pre Alarm Status Bar

When pre-alarms are received and displayed on the monitor using the ***Alarm Playback*** keys, the ***Alarm Status*** *bar* provides details of the alarm image currently being displayed in full screen format on the monitor.

The Alarm Status bar shows pre-alarm images **relative** to the instant of the alarm trigger, ie. **before** the alarm event. As there are usually also post alarm images associated with the Alarm event, the Alarm Status bar shows both pre-alarm and post alarm image positions on the time bar display.


Replay Indicator icons
Play Forwards
Fast Foward
Play Reverse
Fast Reverse
Pause
Alarm Channel # 8
18 Pre-Alarm Images
3 Post-Alarm Images
Current image being displayed indicated by light coloured spot.
8 (18/3) 4 2
1 FASTVU
Pre-Alarm Image Replay Bar
Time Bar indicates the "relative" time period moving away from the instant of the alarm
Post-Alarm Image Replay Bar
Time Bar indicates the "relative" time period moving away from the instant of the alarm
Instant of Alarm
(indicated by Alarm bell icon)

4.12.4 'No Video' Alarm

If the '**No Video**' Alarm option is enabled on a channel, the Transmitter can trigger a 'No Video Alarm' if a camera cable is cut or the camera fails.

When the Transmitter does not detect a video signal on an enabled channel, the following occurs:

- The Transmitter establishes a communication link, if not already on line to a Receiver.
- At the Receiver, a quad alarm display with the message 'No Video' is displayed on the channel where video was lost, and the keyboard beeper sounds (if configured to do so).

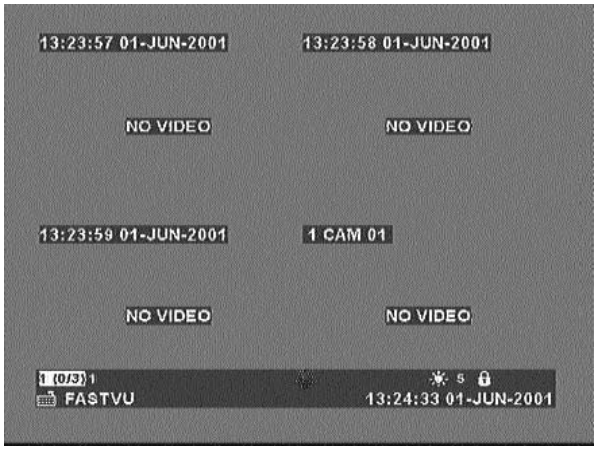


Figure 4-10 - Display of 'No Video' Alarm from Camera #1

To clear the 'No Video' Alarm, press the ***Alarm Reset*** key while viewing the alarm channel.

If video is still not connected to the channel, the standard 'No Video' message then appears. Remember that 'No Video' alarms must be cleared in order to terminate the communication link. While the camera or cable failure is being repaired, the 'No Video Alarm' option should be disabled by accessing the 'Video' setup menu at the Transmitter.

NOTE

If a 'no-video' alarm is received after 6 previous alarms have already been received (but not cleared), the alarm message will be displayed in Quadrant 4 of the screen.

4.13 Clearing Alarms

The ***Alarm Action*** keys allow a particular Alarm Sequence (from a multiple Alarm set) to be selected for review or cleared from the Alarm List.

While viewing the respective channel and pressing the ***Alarm Reset*** key at the Receiver, Alarm Sequences and 'No Video' Alarms are cleared.

This removes the channel number from the alarm status and re-allocates the video memory at the Transmitter for further alarm image storage. The remaining channel numbers in the alarm status are re-positioned to indicate the chronological order of the current active alarms.

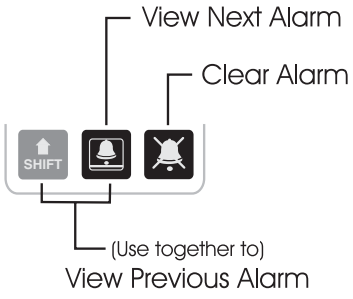


Figure 4-11 - Alarm Option keys

To review another alarm in the Alarm List the Next Alarm key is used to move down the list.

To move back to a previous alarm in the Alarm List press the ***Shift*** key as well as the ***Next Alarm*** key.

To exit from the Alarm Replay display screen **without** clearing the current Alarm, simply switch to another display channel by pressing the ***Camera*** key.

Attempting to Disconnect from the Transmitter while an Alarm sequence is still active on the Alarm Status Bar will result in a error message being displayed.

The message will display for approximately five seconds. To continue with the link disconnection, **all** alarms must be cleared.

4.14 Audio Operation

FastVu allows the transmission of high quality, bi-directional audio simultaneously with the video between the Transmitter and the Receiver. This feature enables a central monitoring station to use audio devices such as microphones and speakers to 'listen and talk' during activities at the remote site.

Note that when very low speed communication links are used, the transmission of the audio channel may reduce the video update rates. In this instance, it may be appropriate to use audio only when absolutely necessary.

4.14.1 Talk and Listen Modes

When audio operation has been configured and the equipment correctly wired, using the ***Audio*** key allows a variety of audio control features to be enabled or disabled, as defined by Table 4-2.

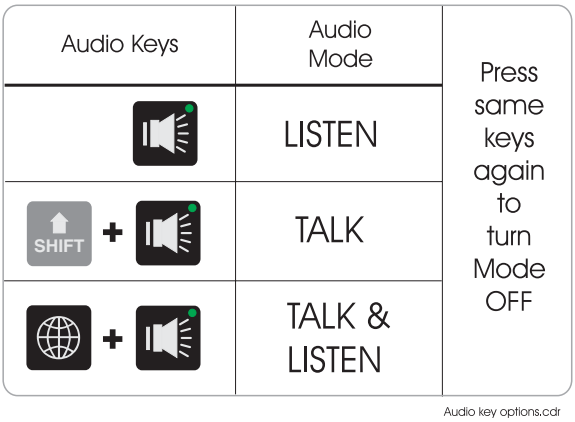


Table 4-2 - Audio Key Options

Using the Press-to-Talk (PTT) input at the Receiver enables the transmission of audio as defined by the audio mode configured during Setup. While operating, an audio symbol (microphone or speaker) appears on the monitor status line.

4.14.1.1 Talk

Enables audio from the Receiver to the Transmitter when the PTT switch is active (closed contact).

4.14.1.2 Listen

Enables audio from the Transmitter to the Receiver when the PTT switch is active (closed contact)

4.14.1.3 Talk and Listen

Audio is always enabled in both directions.

4.14.1.4 Intercom

Used in conjunction with the ***Audio*** key on the keyboard. When the Intercom option is selected and the ***Audio*** key is pressed, audio transmissions will be enabled and audio will be sent *in the direction defined by the current position of the PTT switch*. Pressing the ***Audio*** key again will turn off **all** audio.

4.14.2 Audio Shortcut Keys

To switch between the various Audio modes, the keyboard keys can also be used as a shortcut as shown in Table 4-3.

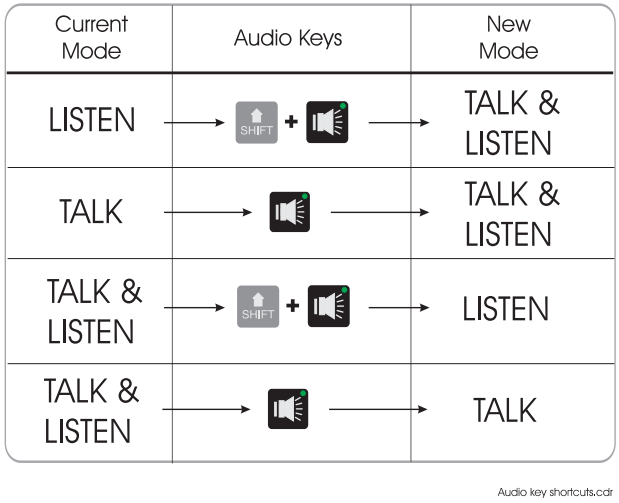


Table 4-3 - Shortcut Keys Between Audio Modes

4.15 PTZ Control

The AMK-300 Keyboard is used to control cameras fitted with Pan/Tilt/Zoom (PTZ) functionality. For a complete description of PTZ setup and operation, please refer to the AMK-300 User Manual and the installation section of this manual for details of the telemetry station connection.

When connected via a limited bandwidth link and operating a PTZ equipped camera in either pan, tilt, zoom or iris modes, the image being transmitted and displayed automatically reduces in size by 60% and drops to picture quality '1'. This gives a high update rate for the operator to accurately position the camera. The entire image is constantly updated.

After releasing the joystick or a PTZ movement key (for example, the *Iris* key), the Receiver monitor retains the reduced size PTZ display for the '*PTZ Hold Time*', a programmable time period used to allow the Operator enough time to make minor adjustments. Any activation of the joystick or a PTZ movement key will restart the *PTZ Hold Time*. Following the expiration of the PTZ Hold Time, the screen returns to normal display mode.

4.15.1 Dynamic Pan and Tilt Speed Control

A number of telemetry stations have the capability to dynamically change the speed of their pan and tilt motors.

When utilising the AMK-300 Keyboard, the dynamic speed control is accomplished by moving the PTZ joystick. The further the joystick is moved in the desired direction (for panning or tilting), the faster the PTZ camera will move.

4.16 Using the Keyboard

The ADPRO AMK-300 Keyboard is an external device connected to the FastVu system via a cable.

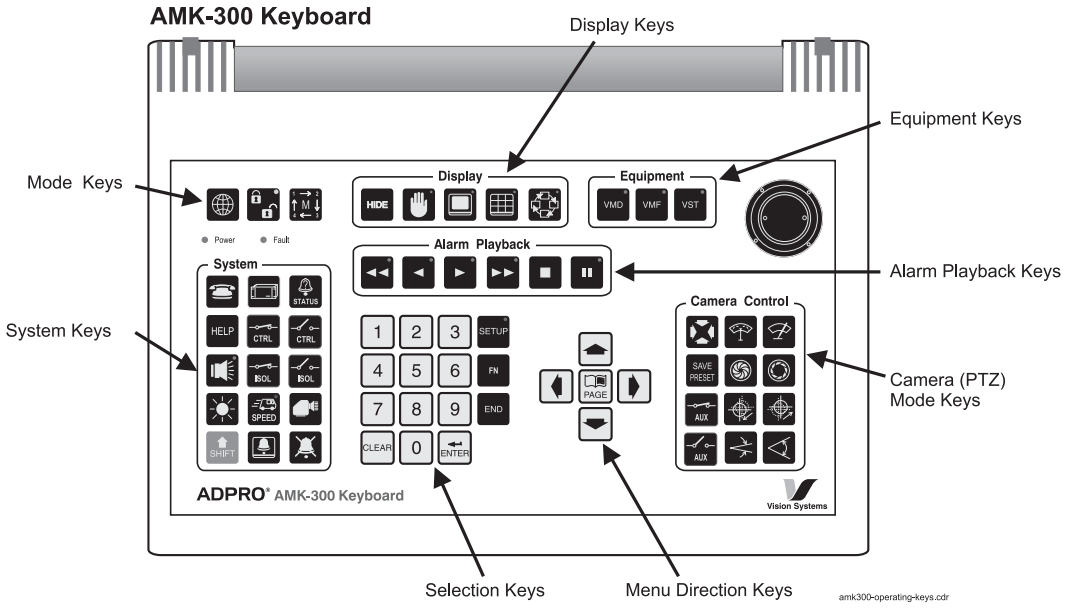


Figure 4-12 - AMK-300 Keyboard layout

Keys and controls of the AMK-300 are divided into several logical groups of keys: These groups are arranged for control of the following feature sets:

- Mode Keys
- Display
- Equipment
- Alarm Playback
- System Operation
- Selection and Setup
- Directional Control (and Setup Stepping)
- Camera (PTZ) Control

The AMK-300 is a universal keyboard can be used with a number of ADPRO products and some keys may only be applicable to specific types of equipment. The keys shown below are applicable to a FastVu system.

The following paragraphs describe the action caused by pressing the keys in the specified group. Actions caused by simultaneously pressing both the ***Shift*** key and the specified key are also listed.

4.16.1 Mode Keys

GLOBAL key

The ***GLOBAL*** key, is used to control the bi-directional audio feature. When used in conjunction with the Audio key, the PTT operation mode is switched (see Audio Operation section).

ACCESS/SECURE key

The ***Access/Secure*** key is used to change the status of remote Transmitters. When set to ACCESS the remote site will not report (most) alarm events. When set to SECURE, all alarm events are reported (if they have been configured to do so).

When a Reciever is connected to a remote Transmitter, the operator may change the Transmitter's Arm/ Disarm status by pressing the ***Access/Secure*** key. The key is inoperative when the Receiver is not connected to a site. Refer to Section 4.21

Note that if the Transmitters status is set to Access, via the Transmitter's hardware (via the control pin on the Audio Switch connector), then remote setting cannot be made from a Receiver.

When a system is placed in Secure mode, the key LED is illuminated for visual confirmation.

4.16.2 Equipment Keys

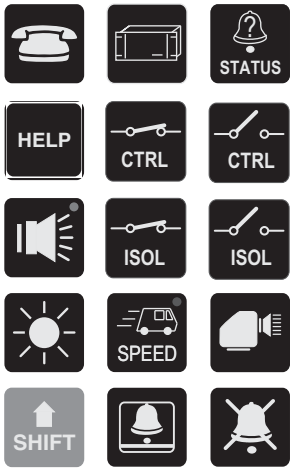
VST key

The ***VST*** (***V***ideo ***S***torage and ***T***ransmission) key is used when connected to a FastVu chassis. If the keyboard cannot communicate with FastVu, then an audible error signal will be sounded.

The ***VST*** key LED is illuminated when connected to FastVu, providing visual confirmation of key selection. The key must be active to allow communications with the FastVu chassis.

4.16.3 System Keys

Some system keys are specific to the FastVu video transmission system and are detailed below.



CONNECT key

The ***Connect*** key is used to initiate a connection to, or disconnection from a remote site.

When FastVu is 'off-line' and not connected to a remote system, pressing the ***Connect*** key will initiate the connection process task. However, if the system is 'on-line' and is using a communications link, pressing the ***Connect*** key will cause the controlling system to start it's 'disconnection' task.

The connection (or disconnection) dialogue is displayed on the Monitor.

CHASSIS key

Not implemented at the Transmitter. When more than one Receiver chassis is configured (daisy-chained), the ***Chassis*** key is used for the selection of an individual chassis (unit) for control, Once a chassis number has been set, it will remain active regardless of any other operation, until changed again by the Chassis key. FastVu systems can daisy chain up to five chassis.

Select the required chassis number <n> then press the ***Chassis*** key.

STATUS key

The ***Status*** key is used to view the FastVu system's 'alarm input status' on the Monitor.

HELP key

The ***Help*** key is used to display the software version fitted to the unit. When **Online**, the help message gives both Receiver and Transmitter revision levels.

CONTROL ON key

The ***On*** key is used to initiate the systems's control output dialog screen(s) OR, when used with a number key (1,2 or 3), turn on one of the system's three control outputs. The operational parameters for the control outputs are set via the system setup menu.

The key is used with a **Receiver only**. Press a number key <1-3> followed by ***Ctrl On*** to switch on a control output at the remote Transmitter.

CONTROL OFF key

The ***Off*** key is used to initiate the systems's control output dialog screen(s) OR, when used with a number key (1,2 or 3), turn off one of the system's three control outputs. The operational parameters for the control outputs are set via the system setup menu.

The key is used with a **Receiver only**. Press a number key <1-3> followed by ***Ctrl Off*** to switch off a control output at the remote Transmitter.

AUDIO key

The ***Audio*** key is used to control the audio transmission features of FastVu.

When the ***Audio*** key is used in conjunction with the ***Global*** key, it will switch the system's bi-directional audio feature on, or if audio is currently on, it will turn the feature off.

When used alone, the Audio key controls audio transmission from the Transmitter to the Receiver and allow audio operation when in the Intercom mode. The reverse direction is controlled by using the ***Shift*** and ***Audio*** keys.

ALARM ISOLATED key

The ***Alarm Isolated*** key is used to temporarily isolate (disable) a particular alarm input while keeping other alarm inputs active. The remote Transmitter must be connected for this key to operate.

ALARM UN-ISOLATED key

The ***Alarm Un-Isolated*** key is used to remove the isolation set on a particular alarm input. The remote Transmitter must be connected for this key to operate.

VIDEO QUALITY key

The ***Video Quality*** key is used toggle the image quality of the current channel (between high and low levels) or to select a new quality level.

High and Low video quality levels are preset using the Setup Menu.

VIDEO SPEED key

Not available in current version.

CAMERA key

The ***Camera*** key is used to display a video input from a camera (channel) on the monitor. The operator enters the desired channel number <1 to 20> followed by the ***Camera*** key. The key may also be used to manually sequence the channels selected in the auto-sequence list for display on the monitor. This is available only when Auto-sequence is active and there are no channels in alarm. The ***Camera*** key is pressed without preceding channel numbers. The auto-sequence list may be displayed in reverse order if the ***Shift*** key is pressed with the ***Camera*** key.

SHIFT key

This key is used in conjunction with other keys to provide either added functionality to the key, or to provide an additional level of 'security' to an action. 'Security' in this instance is a way of forcing the operator to press two keys simultaneously, thus preventing accidental entry of data by pressing only a single key.

NEXT ALARM key

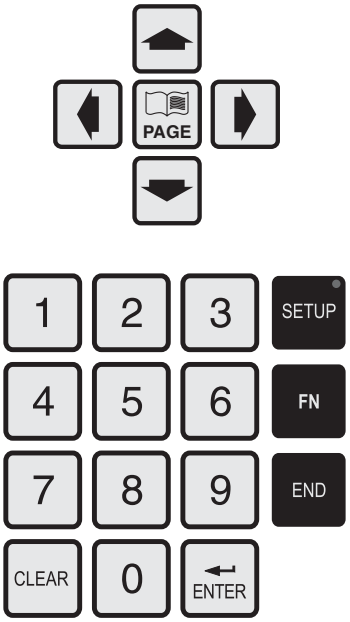
The ***Next Alarm*** key is used in enter the system's 'alarm event mode' of operation. The oldest alarm is shown first on the monitor if more than one alarm is present.

ALARM RESET key

The ***Alarm Reset*** key is used to clear the alarm event that is currently displayed on the monitor.

4.16.4 Selection Keys

The ***Selection*** keys consist of the four cursor keys, the page key, numeric keys 0 to 9, clear, enter, function and end keys.



SETUP key

Allows entry and exit of ***Setup*** Mode. The Setup menu may be protected by a Password. If Password protection has been enabled, the correct Password will need to be entered using the digits keys <0-9>.

FN (Function) key

Not available in current version.

END key

While in Setup Mode, the ***End*** key is used to 'back out' or 'move up' the menu system and eventually display the 'Save current settings' dialog box when exiting from the Setup menu system.

CLEAR key

Use the ***Clear*** key to clear out (blank) a parameter displayed in a selected dialogue box.

ENTER key

The ***Enter*** key is used to select a desire option or input a parameter value (or character string) into a selected dialogue box.

4.17 Selecting a Camera

FastVu accepts colour or black & white video camera or video line inputs. each video input is called a channel. Video images have a corresponding camera (channel) number displayed in the top left-hand corner. Camera numbers are assigned by the FastVu and follow the numbering of the Camera Input connector.

For example, if a camera is connected to the **IN** connector marked '8' on the rear panel, FastVu would classify this video as being from 'Camera 8'.

4.17.1 Current Camera

To select a particular camera as the 'current camera', either:

Press while observing the camera number on the monitor screen. Repeat pressing of this key will cycle through all valid cameras connected to the current FastVu.

or

Press a number key 1 + 8 . In this example **Camera 18** is selected.

4.17.2 Camera Names

Each camera can also be identified with a meaningful text name. This name can be up to 20 characters long and will appear on the image along with the camera number. The display of camera names is user programmable from the setup menu.

If a Camera number is selected, but that channel is not setup as being 'Connected', then the keyboard will double-beep. However, if the camera is **connected** no video is coming from the camera, then the screen display area will be blank with a 'No Video' message. This will happen in any display format.

4.18 Pan/Tilt/Zoom (PTZ) Control and Joystick

The ability to remotely control the physical position of a camera lens and housing together with many functions provided by a telemetry station is generically referred to as PTZ control. The FastVu keyboard provides an operator with the ability control most features available on various telemetry station models such as;

- ***Pan*** Control of the horizontal (azimuth) direction that the camera lens is pointing at any particular time. Position can be referenced to a 'centre' or 'home' position and the camera panned (moved) either left or right of that position.
- ***Tilt*** Control of the vertical (elevation) angle that the camera lens is pointing at any particular time. Tilt can be referenced to a 'home' position and the camera tilted (moved) either up or down.
- ***Zoom*** Ability of a camera lens to change the physical position of its front lens to provide either positive magnification (enlargement) or negative magnification (shrinkage) of an object or scene.
- ***Focus*** Ability of a camera lens to change the relative position of its front lens to maintain the visual clarity of an object or scene within its field of view.
- ***Iris*** Part of a camera lens that controls the amount of available light allowed to pass through the lens.
- ***Wash*** A feature provided on a camera housing where a jet of clean water (or other solution) can be sprayed onto the clear cover in front of the camera lens to remove dirt, dust or grime.
- ***Wipe*** A rubber wiper blade on the camera housing that is mechanically swept over the clear cover in front of the camera lens to displace dirt, dust or grime. Normally used during or after a **wash**.

Telemetry station manufacturers provide a variety of models and features. FastVu provides PTZ control ability for a number of popular models and where possible, supports the features provided by the manufacturer.

Due to the number of models available on the commercial market, details of connection and use for individual models are best provided on a dynamic display environment such as the ADPRO web site at **http://www.adpro.com.au**

4.18.1 Using PTZ

FastVu supports the use of up to twenty telemetry stations, one per camera. The communications protocol required to control a specific telemetry station model:

- Requires all connected stations to be of the same type.
- May not have the ability to address all twenty stations.

Please refer to the Tech-Tip page on the ADPRO website **http://www.adpro.com.au** for the details of a particular telemetry station model.

PTZ units are numbered to correspond with the camera that they control. To use a telemetry station, the particular camera number must be selected as the 'current camera'. To select a particular camera as the 'current camera', either:

Press while observing the camera number on the monitor screen. Repeat pressing of this key will cycle through all valid cameras connected to the current FastVu.

or

Press a number key [1] + [8] + . In this example **Camera 18** is selected.

The Camera Control keys and joystick are now operative.

4.18.1.1 Camera Control Keys

The ***Camera Control*** keys operate the pan, tilt and zoom (PTZ) functions on the currently selected camera (provided a telemetry station is connected). The Camera Control keys are functional regardless of the currently selected equipment type.

For all keys which require a preceding number, if a mistake is made when entering the number, correction is a matter of ignoring any previous entry and typing a new two digit number.

The number of preset positions and Auxiliary outputs is dependent on the telemetry station type. Refer to the telemetry station manual for details.

Figure 4-13 - Camera Control keys

HOME key

The ***Home*** key is used to move the currently selected PTZ camera to 'preset position number 1' (provided the feature is available on the telemetry station)

.

PRESET / SAVE key

The ***Preset*** key is used to select a preset position that has previously been saved using the ***Save*** procedure (see below). It requires the operator to enter the desired preset number <n>, followed by the ***Preset*** key.

Pressing the ***Shift*** and ***Preset*** key saves the current settings in the telemetry station memory for the currently selected camera. These pre-positions can then be recalled.

To save a PTZ preset, move the camera to the required position then enter the desired preset number followed by the simultaneous pressing of the ***Shift*** and ***Preset*** keys.

AUX ON key

The ***Aux On*** key is used to switch on an Auxiliary output of the currently selected telemetry station (if present) and requires the operator to enter the desired auxiliary channel number followed by the ***Aux On*** key.

Example: To switch on Aux output 4 on camera 3, press '3' followed by the ***Camera*** key to select the camera, then press '4' followed by the ***Aux On*** key.

AUX OFF key

The ***Aux Off*** key is used to switch off an Auxiliary output of the currently selected telemetry station (if present) and operates identically to the ***Aux On*** key.

WASH key

The ***Wash*** key is used to momentarily operate the telemetry station 'wash' output. The relevant output switches on while the ***Wash*** key is pressed.

WIPE key

The **Wipe** key is used to momentarily operate the telemetry station 'wipe' output. The relevant output switches on while the ***Wipe*** key is pressed.

IRIS OPEN/CLOSE key

For the currently selected camera, the ***Iris Open*** or ***Iris Close*** key opens or closes the lens' iris respectively while the key is pressed (provided the feature is available on the telemetry station).

FOCUS NEAR/FAR key

For the currently selected camera, the ***Focus near*** or ***Focus far*** key adjusts the lens' focus near or far respectively while the key is pressed (provided the feature is available on the telemetry station)

ZOOM WIDE/NARROW key

For the currently selected camera, the ***Zoom narrow*** or ***Zoom wid*e** key zooms in or out of the camera scene respectively while the key is pressed (provided the feature is available on the telemetry station).

4.19 Control of ADPRO Amux

When 'AMUX IEC' is selected as the PTZ Camera Station type, the Amux Video Multiplexer will utilise its 'operational' mode to pass alarm and image information to the FastVu system. Should it be necessary to change any of the Amux operational parameters, the Amux will need to be placed in 'setup' mode.

To use the Amux in **Setup** mode, the AMK-300 Keyboard has some of its keys re-assigned to allow the Amux Setup menu to be accessed.

The key entries shown in Table 4-4 will control the Amux in the same way as a directly connected Amux external keyboard.

To enter Amux **Setup** Mode, press

When the Amux is in 'setup' mode, the key functions are shown in Table 4-4.

Keys	Amux function (in Setup Mode)
2 5 0 AUX ON	Setup — Enter setup mode
2 5 0 AUX OFF	Setup — Exit setup mode
SHIFT +	Enter
SHIFT +	CLR
SHIFT +	Camera
SHIFT +	Shift + Camera
SHIFT +	ESC
SHIFT + digit	no action until digit entry key is pressed
SHIFT +	<digit> entry
SHIFT + or or or	cursor up, down, left and right

Table 4-4 - Relationship between key entry and Amux 'setup' mode

To exit '**setup**' mode of the Amux, the operator can either press '2' '5' '0' 'Aux off', or alternatively, change the current channel at the Receiver.

Any operation at the Receiver that causes a channel change at the Transmitter, will cause the Amux to exit 'setup' mode.

NOTE

If exiting Amux Setup via the normal ***Esc*** and ***Enter*** actions, the FastVu system will still require a '250 aux off' command to define to the system that the Amux is now back in operational mode.

4.20 Monitor

FastVu supports a display monitor with either a composite video or S-Video input. Both outputs are independent and allow two different monitors to display the same information (simultaneously). It is possible to have one of the monitor outputs connected to a VCR unit while using the other output for a visual display.

4.20.1 Display Modes

The monitor can display output from single or multiple cameras and the display keys select differnt modes of operation.

Full Screen Display Key

The ***Full Screen Display*** key is used to display the current camera as a single, full screen.

Multi-Live Key

The ***Multi-Live*** key is used to display the video from multiple cameras in a variety of screen split formats. The first press of the key sets the monitor to show a 4-way split with the 'current' camera in screen quadrant #1. Pressing the key again will cycle the monitor display through all available formats. The formats are 4, 7, 10, 13 and 16-way.

Auto Sequence Key

The ***Auto Sequence*** key is used to sequence the (sequence enabled) cameras until stopped by the User.

4.21 Alarm Operation

4.21.1 Alarms and Events

When the ADPRO FastVu is operational, external detectors (sensors) or loss of video signal from a camera (due to failure or deliberate cutting) can generate an Alarm. How an Alarm is treated will depend on its user-programmed options.

Each camera can have an external detection device associated with it. Examples of external detectors (sensors) are:

- Door switches
- Pressure mats
- Passive Infra-Red (PIR) detectors
- Panic buttons
- Glass break switches
- Vehicle loops

Detectors are normally located within the field of view of the associated camera and numbered the same. For example a detector wired to **Alarm Input 03** is treated as **Camera 03**. This ensures that an alarm generated by a detector will be readily resolved by viewing its associated camera image.

FastVu can be made to operate in two different modes,

- Secure Mode
- Access Mode

The mode of operation is set by the voltage level applied to the Access/Secure input (Pin 5 of the *Audio Switch* connector on the FastVu rear panel).

When a detector is triggered, the current mode determines the response taken.

4.21.1.1 Secure Mode

Secure mode is operational when the icon is displayed on the monitor status bar.

In Secure mode, the FastVu system responds to an Alarm by:

- Capturing 3x post-alarm images from the alarm camera in the Transmitter
- Stopping pre-alarm image capture on the alarm channel (if enabled) in the Transmitter
- Displaying the alarm icon on the status bar of the Receiver's monitor (if enabled)
- Switching the alarm camera to be the **current camera**
- Switching the General Relay on (if enabled)
- Commencing the **Connection** procedure to the selected Receiver at the central monitoring site, provided this action has been enabled in the Setup menu for this camera (channel). This action will to establish an on-line link for alarm processing by a central operator.

4.21.1.2 Access Mode

Access mode is operational when the icon is displayed on the monitor status bar.

In Access mode, FastVu does not respond to an Alarm.

4.21.2 Alarm Reset

When operating in Secure Mode, all alarms must be reset before an on-line connection can be terminated.

The reset of an alarm(s) requires the operator to interact with the display provided on the Receiver's monitor.

Alarms are active when the **bell** icon is displayed on the monitor status bar as shown in Figure 4-14.

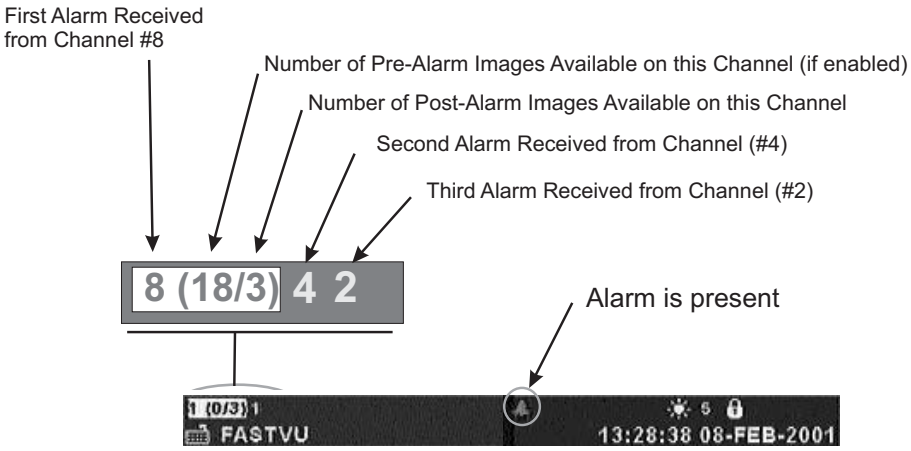

First Alarm Received
from Channel #8
Number of Pre-Alarm Images Available on this Channel (if enabled)
Number of Post-Alarm Images Available on this Channel
Second Alarm Received from Channel (#4)
Third Alarm Received from Channel (#2)
8 (18/3) 4 2
Alarm is present
1 (0/3) 1
FASTVU
13:28:38 08-FEB-2001

Figure 4-14 - Alarm Status icon

4.21.2.1 Single Alarm

To reset a single alarm on the current camera, press the ***next alarm*** key. The alarm details will be shown on the ***alarm status bar*** on the monitor. The operator may choose to:

- Use the ***Reset Alarm*** key to reset the alarm, or
- Press the key to keep the alarm active

> **NOTE**
>
> Depending on the user-programmed selection, reset of an alarm may silence the keyboard buzzer. Otherwise the keyboard buzzer will be silenced when there are no cameras left in the alarm state.

4.21.2.2 Multiple Alarms

If more than one alarm is active, each alarm will need to be reset before an on-line connection can be terminated.

To move to the next alarm, press the ***next alarm*** key. As each alarm is displayed, it can be treated in the same way as a single alarm.

Holding down SHIFT while pressing . This will cycle through the alarm cameras in reverse order.

Hint: The keyboard can be used to shortcut an alarm reset by pressing the alarm camera number <1 to 20> followed by the key.

4.22 External Equipment

ADPRO FastVu has the capability of providing remote control of three items of equipment via the **Control Output** connection on the rear panel of the remote Transmitter. Typical items of equipment include:

- Sirens
- Lights
- Gate Latches
- Boom Gates

To operate a Control Output (for example Output #1 connected to a light):

Press a number key

to switch the light ON. Similarly,

Press the number

to switch the light OFF.

These pieces of equipment are usually located within the field of view of a camera. This ensures that positive identification of equipment action (such as a light) is simply made by viewing the camera image. By associating both detectors and control equipment to an individual camera, security functions can be easily provided through the FastVu system.

The Control Status display screen can be viewed by pressing one of the ***Ctrl*** keys (without a preceding number).

5.0 Specifications

5.1 ADPRO FastVu Version Specifications

ADPRO FastVu is the latest product in the ADPRO product family providing remote site to central station transmission and control of video, audio, pre-alarm, PTZ and control equipment signals. FastVu can be used with Ethernet LAN/WAN networks, digital ISDN telephone lines and dial up or dedicated telephone lines. FastVu provides:

- high quality colour or monochrome operation,
- bi-directional high quality audio capability,
- pre-alarm video capture and replay,
- support of a wide range of PTZ (Pan/Tilt/Zoom) telemetry systems,
- transparent control of remotely located equipment and systems,
- external control via an optional ADPRO AMK-300 Keyboard and
- integration with the Video Central PC based central monitor and control system.
- English, English (US), German, French, Italian, Spanish and Portuguese language setup menus

The FastVu system consists of one or more Transmitters at the remote site and a Receiver at the monitoring site. The FastVu 2020 unit is designed as a Transceiver and is configured via switches (accessible on the rear panel) to be either a Transmitter or a Receiver unit.

Advanced image compression techniques ensure rapid transmission of high-resolution video images. After transmission of the first image, the Transmitter can be programmed to send only the changing portions of the image. This technique rapidly reduces the time to transmit consecutive images. The transmission rate is dependent on the desired (user programmable) quality of the pictures required at the Receiver. FastVu features include:

- Outstanding colour or monochrome picture quality.
- Rapid picture updates in less than 1 second.
- Storage and transmission of 3 post-alarm pictures from each of 6 alarms.
- User programmable storage of up to 180 pre-alarm images.
- Ability to ‘listen in’ and ‘talk to’ the activities occurring at the remote site.
- Interface to Ethernet LAN/WAN, digital ISDN telephone lines or dial up or dedicated telephone lines.
- Bi-directional (transparent) RS232 serial data link.
- RS485/RS232 pan/tilt/zoom camera controller interface.
- Able to control 10 audio inputs and outputs using VM22A Audio Switcher, or up to 100 audio inputs and outputs using cascaded VM22A Audio Switchers.
- All Transmitter functions (video, audio and control) accessible by ADPRO Video Central.
- Remote control functions for contact controlled equipment (gates, lights).
- Remote programming of the Transmitter parameters.
- Auto Sequence feature enables camera scenes to be sequentially viewed automatically.
- Support of a wide range of PTZ camera telemetry systems when using the AMK-300 Keyboard.
- External access control input to enable or disable the triggering of alarms.
- Camera or cable failure detection.
- Industry standard video, alarm, control and communications interfaces.
- On-screen site and camera identification, time and date of the alarm.
- Automatic Transmitter connection on alarm.
- Transmitter dialling with up to 100 preset numbers.
- Transmitter Password protection to prevent unauthorised access.
- Battery backed real time clock.
- General relay output.
- BS8418 compliant when used with VM25 FastVu I/O Expander.

5.2 FastVu Specifications

Function	Description
Video inputs	20 BNC video channel inputs for Model 2020. 10 BNC inputs for Models 2010 and 3010 1 volt p/p video input, 75 ohm or high impedance (switchable).
Video input expansion options	Not available.
Colour / Monochrome Operation	Colour or monochrome. Individual channels can be dedicated as monochrome (B&W). Default operation is for colour.
Video output	1 BNC composite video output designed to drive a 75-ohm load. 1 S-Video output, electrically isolated from composite circuit (Model 2020 only)
Video standard	Either PAL note 2 or NTSC (specified at time of order).
Colour Burst Lock Range	PAL 4.433619MHz ± 230Hz NTSC 3.579545MHZ ± 179Hz
Picture resolution *	PAL/CCIR: 704 x576 pixel (Quality 8) 704 x 288 pixel (Quality 7) 352 x 288 pixel (Quality 5 & 6) 352 x 288 pixel (Quality 3 & 4) 176 x 144 pixel (Quality 1 & 2) NTSC/RS170: 704 x 480 pixel (Quality 8) 704 x 240 pixel (Quality 7) 352 x 240 pixel (Quality 5 & 6) 352 x 120 pixel (Quality 3 & 4) 176 x 120 pixel (Quality 1 & 2)
Grey Scale Resolution	256.
Video Display modes on monitor	Receiver: On-alarm - Quad screen or full screen review. Live event - Full screen live video. Non-alarm - Full screen, 4, 7, 10, 13 or 16 way split.
	Transmitter: Full screen Live.
Image storage on post-alarm	Stores three (3) images separated by a programmable period. Up to six (6) alarms.
Image storage on pre-alarm	Stores up to 180 images, shared between the number of enabled channels (1ch=180, 20ch=9)
Stored alarm image resolution	Quality 1 to 8
Image storage delay for first alarm	0.2 seconds (maximum).
Minimum alarm contact duration	0.5 seconds
Image transmission	The first image transmission time is a function of the selected picture quality, scene complexity and communication rates. Up to 25 picture updates per second for subsequent images depending on scene changes and communication rates.
Transmitter / Receiver operation	Transceiver switch selectable to operate as a Transmitter or Receiver.
Alarm Inputs	Transmitter: 20 alarm/control contact sensing or logic level inputs (Model 2020). 10 inputs on Model 2010 and 3010. Programmable to trigger an alarm on contact opening or closure.
	All inputs have impedence >1K ohm and transient protection >20KV. 37 way D male connector. Contact closed - logic low, 7 mA (maximum), 500 ohms (maximum). Contact open - logic high, 12000 ohms (maximum). Voltage input less than 0.8 V - logic low, 7 mA (maximum). Voltage input between 3.5V and 5.0V - logic high.

Function	Description
Input to Output delay	0.5 seconds (maximum), excluding modem delays.
Network Port	Ethernet 10BaseT compatible. Max data rate 10 Mbits / sec. RJ-45 connector.
Serial Communication Interface	Asynchronous - 8 data bits, 1 stop bit, no parity, programmable data rate from 9600, 19200, 38400, 57600, 115200, 230400 bps. Configured as a DTE device. The Hayes (AT) protocol is used if connected to the public telephone dial network. Synchronous - Reserved for future implementation. 9 pin male D connector.
Data (Transparent) Interface	Bi-directional (transparent) RS232 serial data link between the Transmitter and Receiver. Configured as a DTE device. Programmable baud rate from 300 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 bps. Programmable number of data bits (7 or 8), stop bits (1 or 2), parity (odd, even, none), Flow control via hardware handshaking (or Off). 9 pin male D connector.
Keyboard Interface	RS485 differential balanced input/output serial port RS232 signalling interface switch selectable. Maximum voltage range on either input line: -5 volts to +9 volts. Maximum differential input voltage: +/- 12 volts. 9 pin Female D connector.
PTZ Interface	RS485 differential balanced input/output serial port RS232 signalling interface switch selectable. Maximum voltage range on either input line: -5 volts to +9 volts. Maximum differential input voltage: +/- 12 volts. 9 pin Female D connector.
I/O Interfaces	General interfaces, available via Alarm Input connector, for: Access/secure input at the Transmitter
	‘Press to Talk’ input at the Transceiver
	37 pin male D connector.
Audio Switch Interface	Audio In/Out to VM22A or third party Audio Switcher. Bi-directional audio sent simultaneously with the video (full duplex). Bandwidth: 300 Hz to 3.3 kHz. Input impedance: >6Kohms. Input level: 10mV to 400mV RMS (nom) Output impedance: >6K ohm. Output level: 315mV (nom)
	Serial Output for Channel Number sequencing Open drain outputs indicating the currently selected channel. 32V maximum, 100 mA maximum, output impedence <0.5 ohm Refer to VM22A Audio Switcher manual for details of serial protocol.
	General Output Relay Form C, single pole changeover. Relay contact ratings: 1.0 amp, 32 volts.
	Control Outputs - Transmitter (VM25 not fitted): 3 open drain Control Outputs controlled from the Receiver. 32V maximum, 100mA maximum, On impedence <0.5 ohm When VM25 is fitted, control outputs at the Transmitter are replaced with those of the VM25 (refer to VM25 specifications).
Audio Interface	Direct connection for microphone and speaker via ‘Audio’ connector. Microphone: Differential impedance >6 Kohm Single-ended impedance >3 Kohm Nominal signal level is 100uV to 10mV rms. Speaker: 1 Watt (max) into 8 ohm load.

Function	Description
Audio Line Interface	Line in/out via RCA connections. Line In: Input impedance >6 Kohm Nominal signal level is 10mV to 400mV rms. Line Out: Output impedance is 600 ohm Nominal level is 315mV rms.
Supported Telemetry Stations	Amux IEC Baxall ZTX6 Baxall ZMX-9/16 Building Block Video BBV Rx100/200/300/400 COHU MPC Series Microprocessor Camera Control System Conway Omega Diamond CRX-500 Digital Sprite Ernitec BDR 5XX Series. GPS DCRX and DTMRX Grundig FWE 51/52 Series. Harris HT16D JVC Kalatel CyberDome Kalatel KTD-12X Series LiLin Mark Mercer D250MPT-AF Meridian Domes Molynx TRX250 Series PACOM 2018 Series Panasonic WV-CSR600/G Panasonic 800CS Pelco CX9750, SRD97P21-U and ERD97P21-U Series. Pelco Coaxitron Pelco Spectra Dome Philips Autodome, GEN3 Autodome, TC8560 Series and TC8561A series Sensormatic SpeedDome ULTRA Sensormatic Controller Siemens SCU 30X Series Synectics. VCL Camera Station VICON Surveyor Mini Dome Video Switch VR-1, VR-5, VXT Series Unidex DRX-502A
Supported Modems and Terminal Adapters	Generic Modem Generaic Terminal Adaptor Generic X.21 Banksia ISDN Express Codex 326X Dataplex DPX225 Dynalink 1456VQE ELSA 28.8TQV ELSA ISDN/TLpro Terminal Adaptor EICON Diva ISDN Terminal Adaptor Hayes Accura 28.8K Interlink Voidax Microcom DeskPorte 28.8P Microcom DeskPorte Microcom DeskPorte Fast ES UDS V.3229 US Robotics Sportster 28.8K US Robotics Courier V.90 Scitec or Penril Datalink 14.4 TA440SP 64K TA44-DP 128K

Function	Description
Power requirements	AC Operation (with supplied AC Power Adapter) 100 - 240 VAC, 47 - 63 Hz, 15 Watts (max).
	DC Operation Regulated 12 volts DC, 1.2 amps (max). 1.3 amps with AM-DTCT-2 Down the Coax Telemetry board fitted. NOTE: DC supply must be SELV rated and meet the requirements of IEC 60950 or equivalent.
System control	Operator control via AMK-300 keyboard or VM87 Programmer.
System setup	Languages available: English, English (US), German, French, Italian, Spanish, Portuguese, Simplied Chinese and Korean. Via multi level menu system. The Transmitter can be remotely programmed from the Receiver.
Construction	**2010 and 2020:** Standard 19" rack mount, 2U high subrack to DIN4194. All cables are accessible from the rear. **3010** Unsealed wall mounted metal cabinet
Dimensions	**2010 and 2020:** 482mm (19")(W) x 88.8mm (3.5")(H) x 290mm (11.5")(L). **3010:** 380mm (15") H x 370mm (14.5") W x 130mm (5.1") D.
Weight	Rackmount: 3 kilograms (6.5 pounds) Wall mount: 4.5 kilograms (9.9 pounds)
EMC compliance	Refer to Declaration of Conformity at front of this manual.
Electrical safety	Refer to Declaration of Conformity at front of this manual.
Options	VM21 Relay card for mounting externally to the unit.
	VM22A Audio Switcher.
	VM23 Intercom Handset.
	VM25 FastVu I/O Expander
	VM87 Programmer
Operating conditions	Operating temperature range 0-50 degC (32-122 degF). Humidity less than 90% non- condensing.

* Note:
Note 1: Picture qualities 2-8 are displayed as full screen images at the Receiver. Quality 1 images are displayed at 1/4 screen images.
Note 2: When displaying colour images, FastVu displays 624 lines, and may cause a slight flicker on some digital displays.

5.3 VM25 Electrical Specifications

Function	Description
Relay Outputs	10 single pole form C relay changeover contacts. 2 x 15pin screw terminal connectors. 1 single pole form C contact (located on Spare I/O connector) Relay contact ratings: 0.5 amp, 32 volts.
Alarm Inputs	20 inputs. Single or Dual EOL fully supervised. Each Alarm Input corresponds to its respective Video Input. 2 x 15pin screw terminal connectors. All inputs have transient protection.
Spare Inputs	1 x 15pin screw terminal connectors. 4 spare inputs. All inputs have transient protection.
System Connection	37 way D type Connector for control signals and alarm status information.
Power Requirements	Regulated 12 Volts DC operation. 10-15 volts DC. 3.6 watts (max) at 12 volts DC.
Construction	Sealed printed circuit board with three key lock mounting holes for M3 screws.

Function	Description
Dimensions	265mm (L) x 73mm (W) x 19.6mm (D)
Weight	425 grams
EMC compliance	EN55022:1998 (CISPR 22:1997) / AS/NZS 3548:1995 + A1, A2 Class A Conducted and radiated emissions. EN 61000-3-2:1995 Current harmonic emissions. EN 61000-3-3:1995 Voltage fluctuations and flicker FCC Part 15 Class A Conducted and radiated emissions.
EMC Immunity	EN 50130-4:1995 +A1 Alarm systems immunity.
Safety	IEC 60950:1991 +A1, A2, A3 & A4 EN 60950:1992 +A1, A2, A3, A4 & A11 when used with the supplied AC power adaptor.
Options	VM21 Relay Card for mounting externally to the unit.
	VM22A Audio Switcher
	VM23 Intercom Handset
Operating Conditions	Operating temperature range 0-50 degC (32-122 degF). Humidity less than 90% non-condensing.

5.4 AULT PW160 Specifications (per manufacturer's data sheet)

Function	Description
Input	Voltage: 100 - 240 V.
	Line Frequency: 47-63 Hz.
	Current: 1.2 A (max).
	Protection: Internal primary current fuse; Inrush limiting.
	Configuration: In Case IEC320-C320 with ground.
Output	Output Current: 2A @ 12V, 50^{o}C.
	Combined Line and Load: +/-1% excluding cord.
	Voltabe Regulation Transient Response: 0.5 ms for 50% load change typical.
	Holdup Time: 18 ms (min) @ 120 VAC.
	Protection: Foldback overcurrent protection; Short circuit protection.
	Cord and Connector: 6 ft, 2 conductor, 18 AWG, Ault #3 connector.
Safety Approvals	UL 1950; C-UL 22.2; TUV EN60950; MITI; Approved for Australia.
Electrical	Topology: Switching - fixed frequency flyback.
	Dielectric Withstand: Meets the requirements of EN60950.
	Leakage Current: Less than 750 mA at 127 VAC 50 Hz.
	EMI: Complies with EMC Directives.
	CE: Compliant.
Environmental	Operating Termperature: 0-50 degC (32-122 degF) with no derating.
	Storage Temperature: -30-+85 degC.
	Relative Humidity: 5% - 95% non-condensing.
	Altitude: 0-10,000 feet.
	Cooling: Convectional - non vented case.
Mechanical	Case and Dimensions: 104mm (4.20") (L) x 66mm (2.6") (W) x 37mm (1.45") (H) .
	Case Material: Black 94V0 polycarbonate.
	Weight: 285g (max) (10oz) excluding cord.

5.5 AULT SW132 Specifications (per manufacturer's data sheet)

Function	Description
Input	Voltage: 100 - 240 VAC -10%, +6%.
	Line Frequency: 47-63 Hz.
	Current: 0.4 A.
	Protection: Internal primary current fuse; Inrush limiting.
	Configuration: In Case IEC320-C320 with ground.
Output	Output Current: 1.2A @ 12V, 50^{o}C.
	Combined Line and Load: +/-1%.
	Voltabe Regulation Transient Response: 0.5 ms for 50% load change typical.
	Holdup Time: 18 ms (min) @ 120 VAC; 100 ms (min) @ 240 VAC.
	Protection: Both Foldback overcurrent protection and short circuit protection.
	Cord and Connector: 6 ft, 2 conductor, 18 AWG cord with Ault #3 connector.
Safety Approvals	UL 1950; CSA 22.2; TUV EN60950; MITI; SAA.
Electrical	Topology: Switching - fixed frequency flyback type.
	Dielectric Withstand: Meets the requirements of EN60950.
	Leakage Current: Meets the requirements of EN60950.
	EMI: Complies with EMC Directives.
	CE: Compliant.
Environmental	Operating Termperature: 5-50 degC (32-122 degF) with no derating.
	Storage Temperature: -30-+85 degC.
	Relative Humidity: 5% - 95% non-condensing.
	Altitude: 0-10,000 feet.
	Cooling: Convectional - non vented case.
Mechanical	Case and Dimensions: 107mm (4.20") (L) x 66mm (2.6") (W) x 37mm (1.46") (H) .
	Case Material: Black 94V0 polycarbonate.
	Weight: 285g (max) (10oz) excluding cord.

Due to Vision Systems' continuing research and development program, these specifications are subject to alteration without notice.

6.0 Troubleshooting

6.1 Maintenance Philosophy

The user should never attempt to repair the ADPRO FastVu. Refer all servicing to qualified service personnel. **Any attempt to repair any part of the system will render the ADPRO FastVu warranty void.**

During the warranty period, Vision Systems Limited will replace faulty units free of charge on an exchange basis (refer to the Warranty conditions). Once the warranty has expired, faulty units should be returned to Vision Systems Limited for repair or replacement.

6.2 Power On and Self Test Routines

When power is applied to the ADPRO FastVu, it will automatically perform a series of self-test routines to check the microprocessor circuits. In addition, data integrity testing checks the various user programmable settings to see if any data corruption has occurred.

The self-test function may take up to 30 seconds. On completion of power up testing, the red light on the front panel will be illuminated and the status message cleared. The ADPRO FastVu is now ready to commence operation.

If the self-test fails, the unit performs the following actions:

- The keyboard beeper sounds twice.
- If the keyboard fails its own self-tests, it will beep four (4) times.

If the diagnostic tests fail repeatedly, the user should note the details of the error and contact the ADPRO support service or the local ADPRO supplier.

6.3 Fault Indicator

The ADPRO FastVu continually checks that all microprocessor circuits are operating correctly and restarts itself if a failure occurs. If an internal failure has occurred and restarting the unit does not correct the fault, the red indicator on the front panel will illuminate. The faulty unit should be substituted with a replacement and returned to your supplier, or Vision Systems Limited directly, to be repaired or replaced.

6.4 Trouble Shooting Guide

This guide has been prepared to overcome any difficulties that may arise during installation and operation of the ADPRO FastVu. If satisfactory operation of the unit cannot be obtained using this guide in conjunction with the installation and operating instructions of this manual, contact your supplier or Vision Systems Limited directly. The serial number of the unit and the firmware version numbers should always be quoted.

SYMPTOM	CHECKS AND PROBABLE CAUSES
Front panel Power Light does not illuminate	Check Main Power fuse on rear panel. Check internal PCB Power and Earth Return fuses on main PCB.
No picture present	Check that the green power light is on. If not, check that input power to the ADPRO FastVu is within the specifications. Check that the video cables are correctly installed. Check that power is connected to the monitor. Check the brightness and contrast controls on the monitor.
Video is unstable on the monitor	Check the horizontal and vertical controls on the monitor. Check the video level from the camera into the Video Inputs of the ADPRO FastVu is within the specifications. If the video level is too low, increase the video level by using cable compensators or video line amplifiers.
Cannot enter Setup Mode	Check that the keyboard cable is correctly connected to the 'Keyboard' port. Check that the VST ***VST*** key is selected and the key light is on.
Lost Setup Password	Refer to ***Internal Links - Password Override*** *procedure* in this Troubleshooting section.
Picture present, no time, date or camera ID information	Check that the status lines are programmed to be displayed.
Loss of stored programmed settings during a power failure	Data may have been corrupted. If the ADPRO FastVu continually loses its stored settings during a power failure, consult your supplier or Vision Systems directly.
Restoring the default Factory Settings	Refer to ***Internal Links - Default Setup*** *procedure* in this Troubleshooting section.
Clock displays question marks	The internal battery has run flat. Reset the time. Have the battery replaced. Check the internal battery link for the real time clock.
'No Video' Alarm is constantly triggered	Check that all the Camera inputs have video connected.
PTZ controls are unusable or erratic	Check that the correct telemetry station has been configured in the Setup Menu. Check the wiring and shielding of the PTZ cable is correct.
Rolling Pictures	Check for secure connection of any loop-thru on the video input cables. - use a direct connection to check if problem is fixed. - use VDA (Video Distribution Amplifier) to boost signal levels if video levels from the camera is found to be low. Check camera output level. Check all cables and connections. Refer to Technical Bulletin (99/007) on the ADPRO Website for more information regarding input level measurements.

ADPRO WEBSITE
www.adpro.com.au
or contact yours nearest sales office for a paper copy

6.5 Internal Links

When shipped from the factory the ADPRO FastVu has the following internal links fitted to the Connector PCB.

- Link 1 - Password Override - Installed
- Link 2 - Default Setup - Installed
- Link 3 **-** Factory Test- Installed
- Link 4 **-** Factory Test - Installed

To change the way ADPRO FastVu operates, a link must be REMOVED.

6.5.1 Location of Internal Links

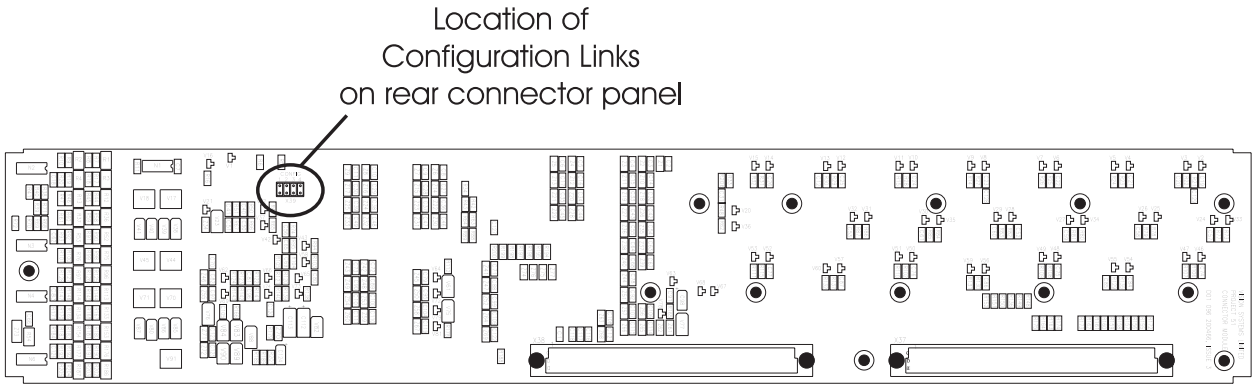


Figure 6-1 - Location of Internal Links (viewed from inside the unit)

To gain access to the Internal Links, **the top cover of the FastVu unit must be removed**. To do this:

- Remove the power connector from the rear of the unit.
- Loosen the top cover of the chassis by unscrewing the two (2) countersunk holding screws.
- Slide the top cover rearwards to gain access to the Connector PCB mounted on the rear.

After a link has been removed or replaced:

- slide the top into position.
- tighten the two screws.
- restore power to the unit.

6.5.2 Password Override

Password checking for the Setup Menu is enabled by using the General Setup menu.

Lost or forgotten passwords? If the password used to access the Setup Menu has been lost or forgotten, password checking can be temporarily disabled to allow access to the Setup Menu by REMOVING the Password Override link. The General Setup menu can then be used to change the Setup Password to a new value. The link can then be replaced for normal password entry operation.

6.5.3 Default Setup

If this link is REMOVED, the FastVu unit will reset ALL configuration fields and parameters (stored in internal memory) to the Factory Default settings. Once a FastVu unit has been powered up with this link removed, new configuration fields and parameters may be entered.

The ***Default Setup*** link must then be **replaced** before powering up again, otherwise all new entries will be lost and the default settings used once more.

6.6 Internal Battery Replacement

Qualified personnel only must be used for replacement of the internal lithium battery.

WARNINGS

The ADPRO FastVu contains an internal lithium battery
There is danger of explosion if the battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the battery manufacturer.
Dispose of used batteries according to the battery manufacturer instructions.

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